The Historical Evolution of Inequality in Latin America

A comparative analysis, 1870-2000

Ewout Frankema

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The Historical Evolution of Inequality in Latin America

A comparative analysis, 1870-2000

Proefschrift

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In the late afternoon of Sunday 11 January 1998 my plane landed in Mexico-city, where I set off for a journey by bike across the astonishingly beautiful landscape of Central and South America. All the way to Buenos Aires I met people who offered me food, shelter and companion. Ever since this journey I cherish the memory of their liveliness and hospitality. I guess it is safe to say that, in my mind, this project has already started a decade ago.

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Although the ‘efforts’ and ‘struggles’ are incomparable, this book is ultimately as much the product of my parents as it is of my own. Among all those other things, my parents have thought me the value of curiosity and non-conformism, essential ingredients for an explorative mind. Their support has simply been indispensable. For more than ten years now, Arjanne withstands my whims and recurring periods of stress. She picks up whatever I forget or leave behind and at the same time, with unparalleled charm and subtlety, remembers me of the more important things in life. Looking back, it was no coincidence that Julian arrived five weeks ahead of our ‘schedule’, one day before I was to receive *the* signature. He clearly is a son of his mother. This book is dedicated to my loved ones.

Groningen,

Friday 11 January 2008,

Ewout

Contents

List of Tables

List of Figures

List of Appendix Tables and Figures

Chapter 1

Introduction

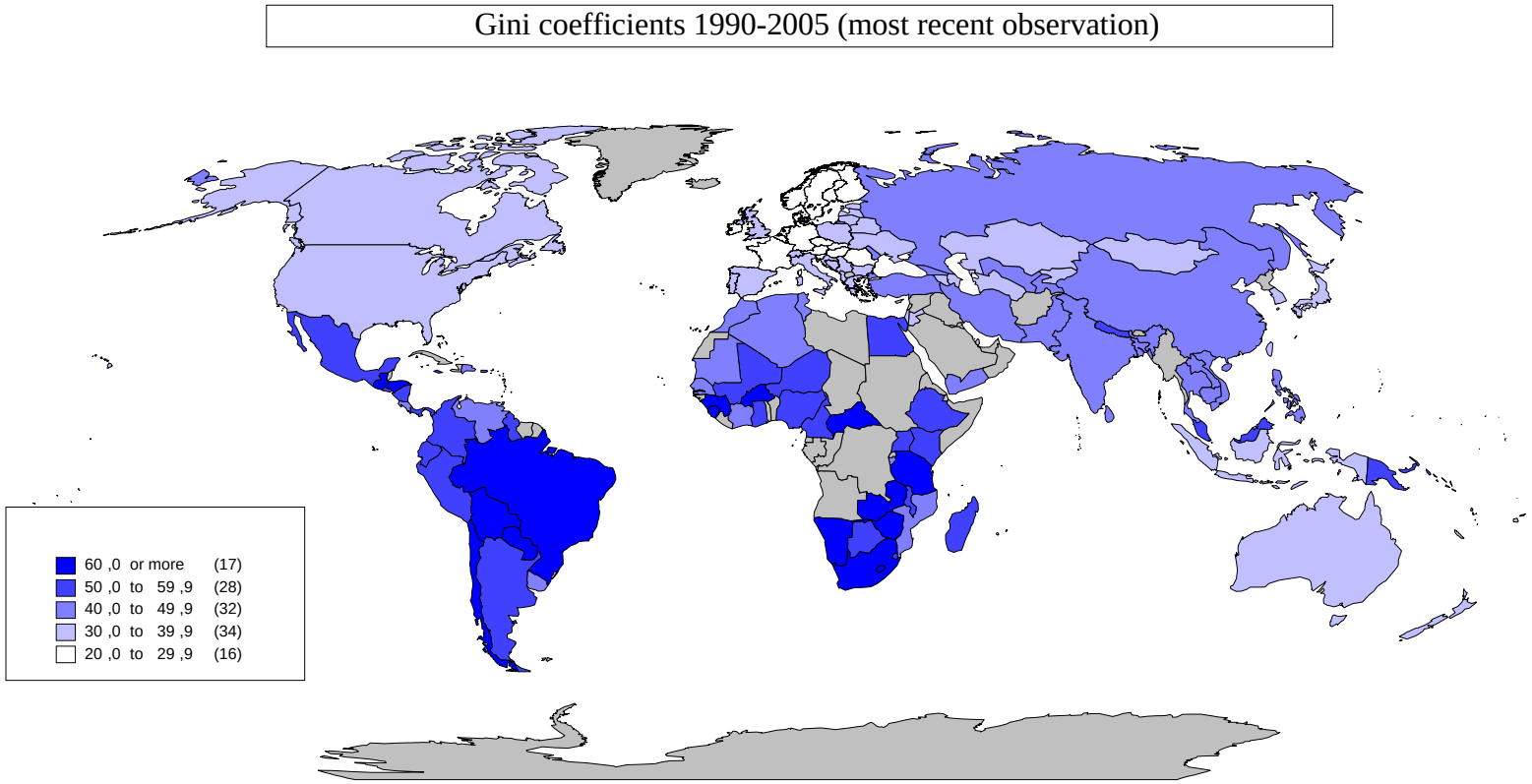
1.1 Latin America: A history of persistent inequality?

The yawning gap between rich and poor is one of the major concerns of our age. The advance of modern economic growth in recent centuries not only resulted in unprecedented disparities in wealth and living standards *between* countries (Lal 1998, Landes 1998, Clarke 2007), but also deeply affected the distribution of wealth *within* countries. The two phenomena are related. Countries with higher levels of per capita income on the whole tend to have lower levels of inequality.[1] This is not surprising. For a society to prosper it is crucial that citizens are willing to exploit their talents and invest their energy in its development. People will do so provided that they can enjoy the fruits of their efforts. When the chances of social mobility are equally shared and the common perception prevails that each citizen obtains a fair share of total welfare, the conditions to enhance personal freedom through economic development are optimal (Smith 1759, Rawls 1971, Sen 1999, World Bank 2006).

This thesis assesses the long run comparative development of income and asset inequality *within* Latin American countries, tracing its roots back into the colonial era, focusing on the period between 1870 and 2000. A quick glance at the world map presented in figure 1.1 learns that Latin American income inequality levels are, at present, among the highest in the world. All Latin American countries (LAC's henceforth), except Cuba, have a Gini-coefficient of income inequality above the world's arithmetic average of 0.39 and the majority even exceeds the threshold-level of 0.50. In Chile for instance, the richest 20% of the Chileans earned 64.4% of national income in the year 2000, while the poorest 40% received just 9.1%. This corresponds with a Gini of 0.59. By comparison, in the Netherlands in 1999 this ratio was 38.6% for the top 20% and 20.9% for the bottom 40%, resulting in a Gini of 0.31 (UNU/WIDER 2005).

[1] Whenever the term "inequality" is used without an adjective, it refers to economic inequality in a broad sense, that is, inequality in wealth, assets and income across families, households or individuals. When addressing a more specific type of inequality an adjective will be used, i.e. "educational" or "land" inequality. The term "inequality" is exclusively used in a non-normative manner, simply stating that there is a difference between individuals or groups in terms of their income levels, social status or political power. The use of the term "inequality" in this thesis further presumes that it can be expressed in terms of a level that can be characterised as small or large, decreasing or increasing, and so forth.

Figure 1.1: World Map of income inequality within countries



Source: UNU/WIDER (2005) *World Income Inequality Database* (WIID), Version 2.0a

This study focuses on the historical evolution of inequality in Latin America between 1870 and 2000. This period is generally referred to as "the long twentieth century".[2] Although we do not dispose of any comparable income inequality estimates that go back much further than just a few decades, there is ample qualitative evidence that Latin American levels of income inequality around 1870 were high. The prevalence of slavery far into the 19th century, the skewed distribution of land (the key asset of production in pre-modern economies) and the oligarchic nature of the political establishment indicate that the colonial legacy of inequality was pervasive and persistent throughout the early post-independence era.[3] The year 1870 marks the start of a phase of increasing integration of post-independent Latin America in the Atlantic economy and more generally marks the beginning of the era of "modern economic growth" in the region.[4] Sustained rates of economic growth and an accelerated pace of technological change, demographic growth and urbanisation completely transformed the traditional outlook of the Latin American economies.

Table 1.1 shows that since 1870 the average annual per capita growth rates were considerably higher than in the period 1820-1870, with the exception of two decades in the 1930's and 1980's. Consequently, in 2001, the regional average per capita income level was approximately 4.5 times as large as in Sub Saharan Africa (Maddison 2003). According to the World Bank only Haiti and Nicaragua at present should be considered as low income countries, rather than middle income countries (World Bank, *World Development Indicators* 2006). Therefore, Latin America's growth performance since 1870 has been described in the recent literature as "fairly well" (Bértola and Williamson 2006: p. 11).

With the onset of modern economic growth the sources of production and income changed dramatically. At the threshold of independence in the early 19th century Latin American societies were predominantly rural societies, applying traditional non-mechanical production techniques. At present, over three quarters of Latin America's citizens make their living in the urban economy (ECLAC 2004), including large modern sectors in which technologically advanced and knowledge intensive production processes are applied.

[2] See for instance Bethel (1986) Bulmer-Thomas et al. (2006) and Cardenas, Ocampo and Thorp (eds.) (2000) An Economic History of Twentieth-Century Latin America, Volume I, The Export Age.

[3] And even if income would have been more evenly distributed around 1870 than it is today, the interpretation of such a finding depends largely on how we judge the fact that so many people were working under semi-feudal labour relations or outright slavery.

[4] In Kuznets' study Modern Economic Growth. Rate, Structure and Spread, "modern economic growth" is distinguished from "pre-modern economic growth" as the era starting in Great Britain in the second half of the eighteenth century, characterised by unprecedented and sustained increases in "output per capita (or individual), or per worker, most often accompanied by an increase in population and usually by great structural changes, that is, changes in social and economic institutions, or practices. In modern times the main structural have been in the movement from agricultural to non-agricultural production (the process of industrialization); in the distribution of population between the countryside and the cities (the process of urbanization); in the shifting relative economic position of groups within the nation (by employment status, level of income per capita, et cetera); and in the distribution of goods and services by use." (1966: p. 1).

Urbanisation went hand in hand with industrialisation and this process of structural change continued to spread throughout the region in the course of the 20th century. Table 1.2 illustrates the magnitude of the changes that occurred in the composition of the Latin American labour force as a result of this economic transition.

Table 1.1: The growth of the Latin American economy, 1820-2000

	1820-69	1870-1913	1914-29	1930-39	1940-49	1950-73	1974-79	1980-89	1990-2000
GDP	1.4	3.5	3.2	2.3	4.6	5.3	4.9	1.7	3.2
Population	1.3	1.8	1.7	1.8	2.5	2.8	2.4	2.1	1.6
GDP per capita	**0.1**	**1.8**	**1.5**	**0.5**	**2.1**	**2.6**	**2.6**	**-0.4**	**1.6**

Source: Maddison 2003: pp. 128-9, 139-40, 149-50; see also Hofman 1998.
Notes: Compounded average of the eight largest LAC's covering 81% of total population and 88% of total GDP in 2000; Argentina, Brazil, Chile, Colombia, Mexico, Peru, Uruguay, Venezuela.

Table 1.2: The development of the urban and industrial labour force in Latin America, 1870-2000 (percentage shares of total labour force)

	1870*	1900	1950	1960	1970	1980	1990	2000
Urban labour force (% of total)	22.3	31.2	43.5	50.5	56.7	64.0	74.5	81.2
Industrial labour force (% of total)	9.5	13.3	19.2	20.5	22.2	24.8	23.6	21.8

Sources: Urban labour force: *1870 are guesstimates based on a backward extrapolation of the 1900 figure, using average annual growth rates of the urban population in Argentina, Brazil, Chile, Colombia, Cuba and Venezuela presented in Scobie (1986: p. 240, table 1); Mitchell for 1900; PREALC (1982) for 1950-1980; FAOSTAT for 1990, 2000. Industrial labour force: Mitchell for 1900; ILO (1997) for 1950-1990; WDI (2005) for 2000. The figures for 1900-2000 are based on a weighted sample of Argentina, Brazil, Chile, Colombia, Mexico, Peru, Uruguay and Venezuela covering 81% of total population and 88% of total GDP in 2000 (Maddison 2003).

The increase in average levels of productivity and income was so large that, if total Latin American national income in the year 2000 would have been evenly distributed among its population, poverty (according to the monetary definition of the World Bank) would have been completely eradicated. In reality more than 129 million people, that is ca. 25% of the total population, were living under the poverty line of two dollar a day, of which nearly 52 million had to survive on less than one dollar a day (World Bank, *World Development Indicators* 2006). Indeed, the problem of poverty in Latin America is intertwined with the problem of income inequality. The key question is: Why did modern economic growth since 1870 not lead to a more fundamental and sustained decline in inequality?

This thesis analyses the historical evolution of inequality in Latin America in a *comparative* perspective to explore the typically "Latin"[5] – as opposed to the more "general" – characteristics of its economic development and distributional trajectory. Many of these

[5] According to the most common geographic definition "Latin America" covers "all countries in the Western hemisphere south of the USA" including, at present, no less than 38 nations (Hillman 2005, Bulmer-Thomas et al. 2006, World Bank 2004). Nearly half of these countries (most of which are smaller Caribbean islands) are excluded because the required historical data are unavailable.

general characteristics are rooted in a shared colonial history with unifying tendencies in legal affairs, military and political culture, religion, language and the orientation of its socio-economic systems (Engerman and Sokoloff 1997, 2000, Bakewell 2004). At the same time Latin America's intra-regional diversity in economic and institutional development is undeniable. To reconcile a generalist approach of Latin American inequality with the widely observed intra-regional diversity, Wittgenstein's analogy of "family resemblances" serves as a guide: the individual members of a family do not possess all the family characteristics, but they do possess sufficient resemblances in order to be recognized as part of the family (Grayling 1988). Hence, none of the LAC's can be considered as a Latin role-model, but all LAC's, to various degrees, posses "Latin" characteristics. This study specifically aims to shed light on these family resemblances, rather than the individual character traits, but it will in specific cases exploit the variation in the latter to indicate the limits of generalisation.[6]

The 20th century record of Latin American inequality stands in sharp contrast with distributive developments in various other world regions (Morley 2001, World Bank 2004). With the evolution of democratic welfare states originating in the 19th century, the equality of social and economic opportunity has become an indispensable part of the collective concern in many Western countries. Although especially in the Anglo-Saxon world income inequality has gradually increased since the 1970's, from a long run perspective the transition from a pre-industrial to a post-industrial society in the Western World has come along with a substantial reduction in income inequality, as reflected by the marked increase of the labour share in national income (Brenner et al. 1991, Soltow and van Zanden 1998, Lindert 2000, Morrisson 2000, Clarke 2007).

In the socialist countries of the 20th century an even more radical tendency towards egalitarianism took place under the flag of Marxist-Leninist doctrine. In Russia, China, Eastern Europe and Cuba this was enforced by large scale interventions in the (private) asset distribution. State bureaucracies implemented grand schemes of economic planning. Phases of strong economic growth seemed to confirm the viability of the socialist development model. However, the suppression of individual choice and voice and the restriction of factor mobility gave this growth record a rather sinister and instable character.[7] Since the decay of socialism

[6] Fernandez-Armesto defends his generalist approach in his Hemispheric history of the Americas as follows, "Genuine historic communities always differ from their neighbours in some ways; one might well treat Nicaraguan exceptionalism or Paraguayan exceptionalism as a reason for separating the history of those countries from that of the rest of the New World. But when exceptional cases are examined in detail the similarities usually outweigh the differences. The differences cannot be appreciated unless in comparative perspective; the exceptionalist hypothesis always has to be tested by contemplating what is said to be exceptional alongside what is supposed to be normative" (2003: p. 17)

[7] De Toqueville stated already in 1848 that, "Democracy and socialism have nothing in common but one word: equality. But notice the difference: while democracy seeks equality in liberty, socialism seeks equality in restraint and servitude", cited in Hayek (1994: p. 29).

in the last decades of the 20th century, income inequality increased rapidly in former socialist countries (Verhoeven 2007).

East Asian countries such as Japan, Taiwan and Korea have realised rapid rates of growth in the 20th century and in the meantime managed to keep levels of income inequality limited. The relative egalitarian distribution of land and the pursuit of balanced rural-urban income policies are considered important pillars under the East Asian path of "growth with equity" (Fei et al. 1979, World Bank 1993, Fei and Ranis 1997). However, the latter qualification does not seem to apply very well to the more recent growth paths of China, India and the South East Asian newly industrialising economies.

Altogether, the marriage between modern economic growth and equity does not appear as self-evident at the beginning of the 21st century as it may have appeared in the 1960's. Yet, the historical record of the 20th century *has* shown that inequality in the distribution of income and wealth can decline dramatically in a relatively short period of profound structural and institutional (including ideological) change. It has also shown that rapid growth does not necessarily lead to increasing inequality, on the contrary. But despite its respectable growth rates, its profound structural change and the evident presence of socialist and capitalist ideologies, a sustained decline in the historically high levels of inequality did not materialize in 20th century Latin America.

The puzzle is even more complicated, however, since the observed trend in income inequality is difficult to reconcile with the notable record of social progress in Latin America during the 20th century. Table 1.3 shows three important indicators of social development in 20th century Latin America: literacy rates, life expectancy at birth and levels of income inequality. The table indicates that at the start of the 20th century less than one third of the population in the average LAC was able to read and write, while at the end literacy rates in most LAC's exceeded 90%. Progress in life expectancy has also been remarkable. The figures more than doubled from an average of 31, between 1910 and 1930, to 71 years in the year 2000. These figures are in line with the findings of Astorga et al. (2005) who argue that a significant catch-up took place vis-à-vis the United States in terms of life expectancy and literacy rates, in particular during the mid 20th century (1940-1980).

Despite endemic political instability and the relatively slow advance of democratisation, virtually all LAC's are nowadays administered by a democratically elected regime. The political representation of the lower social classes has received a firmer legal basis in the 20th century, not in the least place because of the legalisation of labour unions and worker's right to protest (Hillman 2005, Spalding jr. 1977). Against the backdrop of this notable record of social progress and civil emancipation it is all the more surprising that the levels of income inequality, which were already high by world standards, have recently only further increased. As far as most of the available income inequality estimates are concerned,

this rise has occurred from the 1970's onwards. It has caught the attention of many scholars wondering about its causes (Londono and Székely 2000, Thorp 1998, Morley 2001, World Bank 2004, Székely and Montes 2006). Why did the fruits of modern economic growth and social progress not materialize in lower levels of income inequality? Solving this puzzle is the prime objective of this study.

Table 1.3: Social development in Latin America: Literacy, life expectancy and income inequality, 1900-2000

	Literacy % pop 10+ **ca. 1900**	Literacy % pop 15+ **2000**	Life expectancy at birth **1910-1930**	Life expectancy at birth **2000**	Income inequality Gini (average) **1950-1990**	Income inequality Gini (recent) **1990-2003**
Argentina	52	97	44	74	0.43	0.52
Bolivia	17	85	28	64	0.55	0.63
Brazil	26	86	31	69	0.58	0.61
Chile	43	96	30	76	0.55	0.59
Colombia	32	92	31	72	0.54	0.57
Costa Rica	33	96	33	78	0.47	0.48
Cuba	41	97	36	77		
Dominican Rep.		84	26	70	0.47	0.48
Ecuador		92		71	0.47	0.56
El Salvador		79	29	71	0.51	0.53
Guatemala	11	69	24	66	0.56	0.6
Haiti		50		63		
Honduras	15	75	34	59	0.55	0.6
Jamaica	32	87		76	0.49	0.54
Mexico	22	91	28	73	0.52	0.51
Nicaragua		66	24	69	0.54	0.54
Panama		92	36	75	0.55	0.58
Paraguay	30	93	29	71	0.58	0.59
Peru	38	90		70	0.53	0.53
Puerto Rico		94		76	0.49	0.5
Trinidad & Tobago		98		71		
Uruguay	54	98		75	0.42	0.45
Venezuela	34	93	31	74	0.44	0.46
Unweighted Average	**32**	**87**	**31**	**71**	**0.51**	**0.54**

Sources: Income inequality Gini's are derived from UNU/WIDER, *World Income Inequality Database* 2005; Literacy rates 1910-1930 from Mariscal and Sokoloff (2000: pp. 172-3) and for 2000 from World Bank, *World Development Indicators 2006*, Life expectancy 1910-1930 from Thorp (1998: p. 356), Life expectancy 2000 from ECLAC (2004: pp. 10-11).

Notes: The Gini coefficients of income inequality refer to the distribution of national gross household income, except for Argentina and Uruguay (urban income) and Bolivia, Jamaica, Nicaragua and Paraguay (expenditure Gini). Literacy rates refer to the population aged 10+ with a benchmark year close to or exactly 1900. The exceptions are Brazil (7+), Colombia (7+), Guatemala (7+), Honduras (7+, 1887) and Jamaica (5+). Education attained refers to the working age population (25-64), Puerto Rico refers to the year 1990. Life expectancy at birth of most countries in 1910, except for Nicaragua and Venezuela (1920) and the Dominican Republic, El Salvador, Honduras and Panama (1930).

1.2 An integrative approach to the analysis of long run distributional development

Discussing the ample empirical literature testing the Kuznet's curve, Fields argues that the long run relationship between economic and distributional change is determined by the *type* (or *nature*) of economic development rather than the rate of economic growth (Fields 1980: p. 94; 2001: p. 69). This is one of the major presumptions of this study. On the type of Latin American economic development a few remarks can be made beforehand. Latin American economic development does not easily fit within a standard neo-classical world view, where free and competitive markets guarantee a free flow of labour and capital and a free diffusion of technology and knowledge. In fact, on the basis of the assumptions of perfectly competitive markets and the occurrence of diminishing returns to investments, the neo-classical view of economic change entails the prediction of income *convergence* in the long run. Assuming an institutional environment which is equal for every economic agent, different individual capacities and preferences are the sole determinants of personal income inequality. Not only is a long run tendency towards income convergence hard to observe in Latin America, but more important, the assumption of free and perfectly competitive markets largely fails to hold for most of the Latin American economies during most of its modern history.

A more recent generation of economic models allows for cross-country differences in the steady-state of inequality, on the basis of the explicit assumption of factor market imperfections. In these models the distributive steady-state depends on the initial (historical) distribution of assets and wealth. High initial asset and wealth inequality induces a path of economic and institutional development characterised by a comparatively high degree of factor market imperfections. Economic inequality persists from one generation to another if the mobility of production factors such as labour and capital remains restricted. Institutional change may remove factor market imperfections, enhance factor mobility (and social mobility), thus initiating a transition from one distributive steady-state to another.[8] Hence, the incorporation of factor market institutions and factor market imperfections are a prerequisite for the theoretical analysis of Latin American inequality.

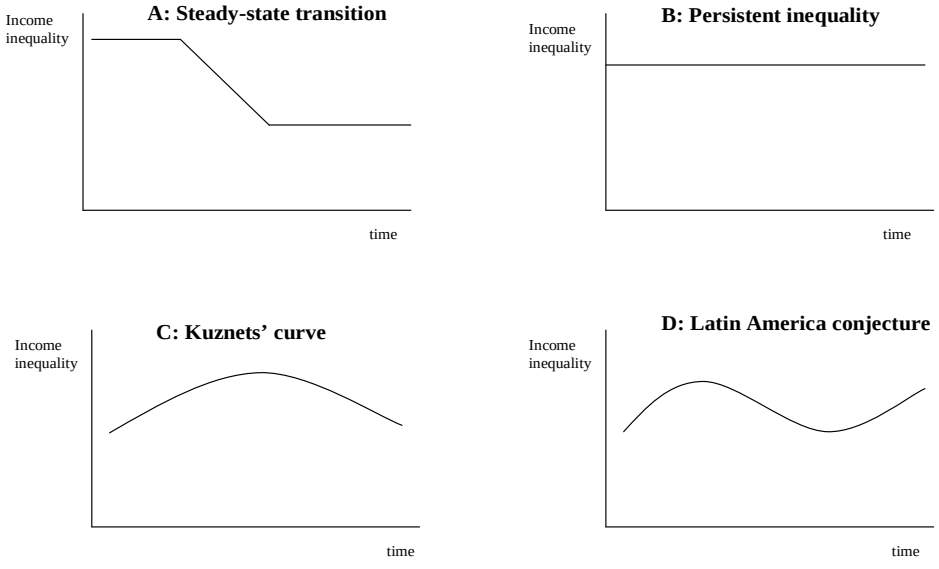
Yet, theories of persistent inequality cannot explain why and in which historical context asset and wealth inequality evolves and they cannot explain under which historical circumstances the institutional changes inducing a transition in inequality occur, or not. The best these models can do is to factor-in a "historical shock" invoking institutional change. In other words, models of persistent inequality are helpful to understand why inequality remains so large in some parts of the world, but to understand the *Latin American* nature of inequality requires an *integrative* approach in which 1) the endogenous character of institutional change

[8] See, for instance, Murphy et al. (1989), Banarjee and Newman (1993), Galor and Zeira (1993), Aghion and Bolton (1997), Picketty (2000) or Mookherjee and Ray (2003).

is acknowledged and 2) institutional change is regarded as a function of interacting historical forces (Greif 2006).

Another reason why I propose an *integrative* approach is illustrated in figure 1.2. Theoretical models of persistent inequality are primarily devised to explain under which conditions a transition from a steady-state of high inequality to a steady-state of low inequality occurs (see graph A of figure 1.2), or, under which conditions high inequality remains persistent (see B), (i.e. in absence of specific institutional changes). Kuznets' inverted U-curve hypothesis, undoubtedly the most widely applied perspective on long run distributional change, holds that in response to modern economic growth and structural change income inequality increases in the first stages of the economic transition and then turns to a sustained decline when urban industrial societies mature (see C). Yet, the empirical findings of this research project do not suggest that one of these three stylized pictures of the inequality trend do a good job in explaining the case of many LAC's. According to my conjecture of the secular trend of inequality, the majority of LAC's reveals a fluctuating pattern with two crucial breakpoints in the 20th century (see D).

Figure 1.2: Four stylized conjectures on the secular trend of income inequality



The income Gini's in table 1.3 suggest that an upward reversion in the inequality trend has taken place during the post-war era. In addition, in some of the economically more advanced LAC's a downward reversion of the trend is likely to have occurred during the interwar period. Hence, the explanatory framework of this thesis should allow for long run trends in inequality with a wave like pattern (see D). The timing of these turning points (and the intra-regional variety in the country specific trends) can only be understood when paying attention to the interaction of various structural forces, which operate in a specific historical context.

What are these historical forces? Apart from mere temporary historical events such as the First World War, the Mexican revolution or the economic crises in the 1930's and 1980's, the empirical literature tends to pay ample attention to two structural forces. The first concerns the impact of globalisation and de-globalisation (from a trade perspective) on distributional change. Ever since colonial times Latin America has been firmly integrated in the Atlantic economy and world market movements have affected economic policies in Latin America perhaps more than in any other region. The second concerns domestic structural economic change in a broad sense, including changes in the sector structure of production, the composition of the labour force and technological and demographic change.[9] However, rather than attempting to separate the impact of these factors, this study emphasizes their interrelatedness and mutual feedback mechanisms. The *integrative* approach does justice to the path dependent nature of historical change.[10] Figure 1.3 summarizes the explanatory framework. The degree of factor mobility plays a key role in this framework, presuming that changes in the structure of the asset and income distribution are most likely to occur if the mobility or the economic function of labour, capital, land and skills changes rapidly.

How do the combined forces of structural change, globalisation and institutional change induce distributional change? It is helpful to distinguish between *direct* and *indirect* effects. Government policies may directly intervene in the asset distribution, for instance through a land reform or the diffusion of public education, or in the personal income distribution, for instance via wage regulations or tax schemes. Yet, distributional changes are also often the consequence of *indirect* effects running via the channels of the functional income distribution. Figure 1.4 illustrates the key relations of the functional income distribution framework, including the asset distribution, the sector income distribution, the factor income distribution and the personal income distribution.

[9] For concise surveys of the empirical literature one may consult Aghion and Williamson (1998) or Helpman (2004, Chapter 6, pp. 86-110).

[10] North describes the term path dependence as the recognition that the institutions that have accumulated give rise to organizations whose survival depends on the perpetuation of those institutions and which hence will devote resources to preventing any alteration that threatens their survival… Path dependence is not "inertia", rather it is the constraints on the choice set in the present that are derived from historical experiences of the past (2005: pp. 51-2)

Figure 1.3: An integrative approach to long run distributional change

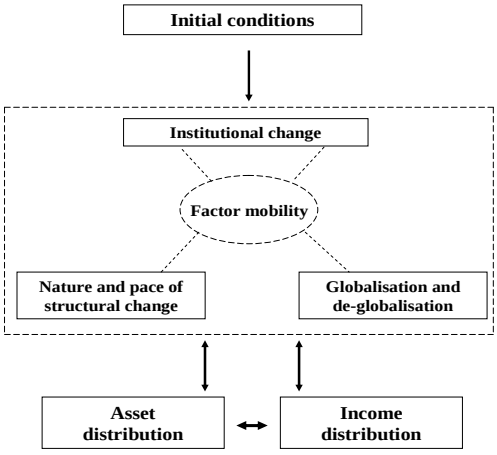
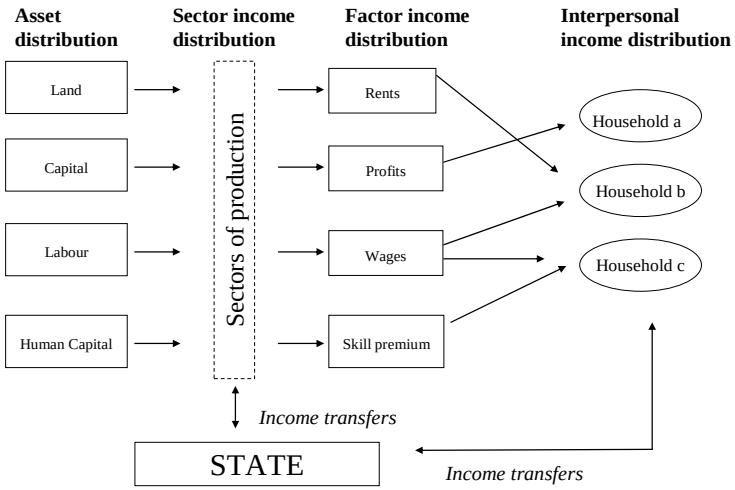


Figure 1.4: A functional income distribution framework



Source: Author's own elaboration of figure 6.1 in Ray (1998: p. 172)

Since each sector and each production factor can, in principle, be distinguished by its relative share in total national income, this framework offers an opportunity to empirically link economic changes to changes in personal income. Hence, the functional income distribution framework opens up the black-box of the Gini-coefficient of personal income inequality and

brings theoretical rigour in the analysis of distributional change. Theories regarding the impact of globalisation or skill-biased technological change on income inequality, focus on the effects of economic change on relative factor remunerations as does the work on growth and income distribution of the great classical economists, most notably David Ricardo's (Ekelund and Hebert 1990). This framework also supports the analysis of sector income differentials underpinning Kuznets' inverted U-curve hypothesis. Since functional income distribution data generally extend much further back in time than personal income distribution data, a historical analysis strongly relies on this framework.

To measure and compare income and asset distributions a variety of inequality indicators is used, such as the Gini-coefficient of land distribution, the Theil-coefficient of inter-industry wage distribution and the coefficient of variation of schooling years attained. Such "comprehensive" inequality measures are complemented by more straightforward ratio's such as the "white-collar" wage premium or the grade distribution ratio. The choice for one or another indicator depends on three criteria: 1) *Properties of the indicator*.[11] Does the indicator express what we are interested in and what are the implications of its use for the interpretation of the results? It is argued for instance, that the Gini-coefficient is useful for the analysis of land and income inequality, but has severe disadvantages for the study of educational inequality (see chapter 4). 2) *Comparability of the indicator*. To maximize the opportunities of international comparison, there is a general preference to use indicators which are commonly accepted in related literature. 3) *Properties of the data*. The availability of specific historical quantitative data determines, to a large extent, which indicators can and cannot be used. The Theil-index of inter-industry wage differentials (see chapter 7), for instance, allows for a decomposition of specific income earning or asset owning groups, but can only be applied in a meaningful way if the data are decomposable. Hence, for a comprehensive measure of land inequality, where such detailed data are missing, the Gini is preferred because of its comparative value (see chapter 3).

1.3 Outline

Together the figures 1.2, 1.3 and 1.4 portray the outline of this study. It consists of two parts. The first part (chapter two, three and four) focuses on the initial conditions of inequality in colonial Latin America and the historical evolution of the asset distribution. The second part (chapter five, six and seven) focuses on the secular trend of income inequality in Latin

[11] For a systematic discussion of the properties of various inequality indicators one may consult Ray (1998, Chapter 6, pp. 173-193), or Cowell (2000). For an insightful discussion of different concepts of inequality and related measurement issues see Milanovic (2005).

America in the long twentieth century. Chapter eight presents the conclusion. The line of argumentation is as follows.

Assessing the initial conditions of inequality in the context of colonial settler societies in Latin America, I argue in chapter two that factor market imperfections prevailed in all important segments of the economy: the land market, the labour market, the capital market and the organisation of Atlantic trade. The monopolisation of the key resources of the pre-modern colonial economy was inextricably connected to, what I propose to call the *institutionalisation of inequality*, which implies the introduction of formal and informal rules that legitimise a system of political exclusion, social discrimination and coercive labour relations.

Chapter three delves deeper into the roots of colonial factor market imperfections, examining the nature of land market institutions and the persistence of high land inequality, by comparing post-independence Latin America with other former European colonies. I argue that land inequality across the colonial world has evolved under very diverse geographic and endowment conditions. The economic opportunities related to a tropical climate and the presence of a large indigenous or imported labour force cannot explain the evolution of land inequality in large parts of Latin America, whereas in West Africa, where excellent conditions for plantation economies prevail, land inequality remained modest. Land inequality is much more a political phenomenon, rather than one of economic opportunity, and this helps to understand why the unequal distribution of land has remained so persistent during periods of rapid structural change during the post-independence era.

Chapter four focuses on the development and distribution of education since 1870. Whereas land is a key asset of the pre-modern colonial economy, educational background is the ultimate determinant of the key asset of the modern economy: human capital. In chapter four I argue that, in comparison with other regions in the world, the educational systems in LAC's developed slowly and, especially, retained very poor quality standards for much of the 20th century. The lack of incentives, both from the elite as well as the poor, to raise the quality of public schooling was reflected in high levels of educational inequality. Yet, the chapter also shows that progress in public education in Latin America in the final two decades of the 20th century was comparatively large, which signals an important break with the historical legacy of asset inequality.

The overall conclusion of the first part of this thesis is that, in spite of respectable aggregate income growth and rapid structural change, the institutional changes required to improve the access to such key assets as land and education, were too slow and too limited. Land reforms have been largely absent or ineffective. Educational progress was slow and the problem of educational inequality was not tackled accurately. Although the access to capital markets is not discussed in detail in this study, literature points out that capital market

imperfections were also detrimental to social mobility and the entrepreneurial potential of the poor groups lacking collateral assets (see especially the work of Hernando de Soto 2000). Hence, understanding the colonial legacy of asset inequality helps to explain high levels of income inequality at present. However, it does not explain the occurrence of significant vertical movements in the secular trend of income inequality.

Chapter five discusses various perspectives on long run distributional change along the lines of the explanatory framework presented in figure 1.3. Partly on the basis of inferences from theory and partly on the basis of historical information, a conjecture of the secular trend of income inequality since 1870 is derived as presented in figure 1.2D. The chapter emphasizes the importance of an integrative approach to evaluate the validity of theories of distributive change for the case of Latin America, arguing that the two turning points in the inequality trend occur in a period when rapid transformations in the global economy, the domestic economy and the political economy occur. The specific combination of these factors induces changes in the position of labour unions, in wage and trade regulations and in social insurance programs, in some, not in all, LAC's.

An empirical investigation of long run trends in the functional income distribution during the first phase of modern economic growth (1870-1940) is presented in chapter six. The chapter examines the trends in the ratio of unskilled urban wages versus land rents and per capita GDP, urban wage inequality and the comparative rates of capital formation and their impact on relative factor income shares (labour versus capital). I conclude that, by international standards, levels of wage inequality appear to be relatively modest before 1940, whereas the income bias in favour of capital and land owners seems overt, but changing in favour of labourers during the interwar years. In some of the more advanced LAC's the changes in the functional income distribution in favour of labour were so large that it has incurred a major break point in the inequality trend in the 1920's and/or 1930's. I argue that this break point can not be exclusively interpreted as a result of rapid de-globalisation during the interwar years, but rather should be seen as a response to the rapidly growing power of labour unions and the impact of the Russian and Mexican revolution on the perspectives of the political elite.

Chapter seven consequently focuses on the observed "recent rise" in income inequality in Latin America in the last quarter of the 20th century. It studies the evolution of the urban informal sector and manufacturing wage and productivity differentials in a Theil index framework. In this chapter I argue that the recent rise in Latin American inequality cannot be interpreted solely as the consequence of the economic recession in the 1980's and the effects of skill-biased technological change, but that it is the lack of reforms in the asset distribution which are ultimately responsible for the unsustainable nature of the inequality downturn initiated during the inter bellum. The historical legacy of rural inequality, the urban

biased socio-economic policies (ISI policies) and the prevalence of educational inequality, eventually resulted in the dramatic growth of the urban informal sector since, on the whole, Latin American economies created insufficient opportunities for its citizens to exploit their talents, increase their skills and become more productive in a modern (global) economic environment. This is the context in which the major increase in inter-industry wage inequality during the post-war period appeared.

Part One

This thesis consists of two parts. The first part analyses the historical evolution of asset inequality in Latin America. Chapter two discusses the initial conditions of inequality as they evolved during the formation of colonial settler societies in Latin America, chapter three explores the colonial roots of land inequality and chapter four studies the development and distribution of education in Latin America since 1870. The objective of these three chapters is to identify specific Latin American features of asset inequality and assess these features in relation to their particular institutional and historical context. Hence, chapters three and four adopt a broad comparative framework, in which the evolution of Latin American land inequality and its educational development record are systematically mirrored against other world regions such as Sub Saharan Africa, East Asia, North America, Europe, or sets of countries under the heading of “advanced industrial economies”, “OECD countries” or “developing countries”. The retrieved conclusions serve to explain and understand the specific Latin American characteristics of the secular trend of income inequality in the long twentieth century, which is the prime subject of part two.

Chapter 2

The Initial Conditions of Inequality in Latin American Colonial Settler Societies

2.1 Introduction

This chapter discusses, in broad descriptive lines, the initial conditions of inequality in Latin America as they originated, primarily, during the formation of colonial settler societies in the late 15th to early 19th century. Specific attention will be paid to the institutional arrangements that were introduced to protect exclusive colonial trade relations and direct the allocation of labour, capital and land. The objective of this chapter is to show that factor market regulations and the restrictions on factor mobility were embedded in a social order legitimising the concentration of economic and political power in the hands of the Creole elite. I refer to this process as the *institutionalisation of inequality*. Yet, the colonial institutional legacy differed largely across the region, depending on specific local conditions such as 1) the ethnic composition of the population and the strength of indigenous institutions that survived the Iberian conquest and, even more important, the disastrous impact of European diseases, 2) the presence of specific natural resource endowments and, 3) the specific geographic location which determined the relative distance to the Iberian peninsula and the Atlantic economy. Shedding light on this intra-regional diversity helps to understand the various paths of economic and distributional development in the post-colonial era identified in the next chapters and is the second objective of this historical introduction.

2.2 The core and the periphery

" …these people live almost like those in Spain, and in as much harmony and order as there, and considering that they are barbarous and so far from the knowledge of God and cut off from all civilized nations, it is truly remarkable to see what they have achieved in all things"

Hernán Cortes in 1520 to Emperor Charles the 5th about the Aztec capital Tenochtitlan (cited in Bakewell 2004: p. 25).

Two years after Columbus' discovery of Hispaniola,[12] Spain and Portugal divided the non-Christian world into two spheres of influence under supervision of Pope Alexander VI. In the treaty of Tordesillas of 1494 the vertical demarcation line was established 370 leagues (1770 km) west of the Cape Verde islands. The treaty accommodated the Portuguese desire to maintain their trading posts on the African coast and continue their exploration of the sea route to the East. Ferdinand and Isabella sought to secure their eventual returns on the Crown's investments in Columbus voyages to the West. The geopolitical implications of the treaty became clear during the first half of the 16th century as Spanish conquistadores put together new bits and pieces of a *Tierra Firme* that turned out to be an entirely New World and the Atlantic coast of Brazil fell subject to the colonial ambitions of Portuguese settlers (Williamson 1992).

The Spanish conquest of the American mainland was primarily directed at the large Aztec and Inca empires in the interior of the continent. The environmental and climatic diversity offered by the slopes and plains of the Meso-American Cordillera and the Andes supported the production of a relatively reliable and varied supply of food that could sustain large urban populations. The mountainous interior also contained rich deposits of gold and silver. The abundant display of mineral wealth and the sophisticated organisation of economic, political and cultural life in the capital cities of the Inca and Aztec civilizations outstripped all expectations of Cortes, Pizarro and their armies (Boserup 1980, Bakewell 2004, Mann 2005).

The nuclei of pre-Colombian civilizations provided the Spanish with a well-established infrastructure for administrative and military control. On the ruins of the Aztec empire, the Viceroyalty of New Spain stretched out from California in the north across Mexico to Guatemala (Antigua) and Nicaragua (Granada) in the south. And similar to the former Inca empire, the Viceroyalty of Peru stretched out from Panama, Colombia (Bogotá), Ecuador (Quito) and Venezuela (Caracas) in the north to the fluid southern borders of the Atacama dessert and the Argentinean pampas. The two viceroyalties were subdivided into smaller jurisdictions, called *audiencias*, which were mostly based on the existing corpus of pre-Columbian polities. Mexico and Lima became the administrative capitals and the main commercial hubs linking the mines in the hinterland to the warehouses of Seville at the banks of the Quadalquivir. The narrow isthmus of the audiencia of Panama (Portobello) functioned

12 The name Hispaniola or La Espaniola means "Little Spain" and refers to the Caribbean island that now consists of Haiti and the Dominican Republic. Columbus was convinced that he had discovered the western gateway to the East Indies and therefore called the indigenous people "Indians". Another Italian explorer, Amerigo Vespucci, formulated the idea that a new continent had been discovered, disconnected from Asia. In honour of Vespucci the German cartographer Martin Waldseemuller used the name America in a map of the New World, which eventually became the standard (Williamson 1992). In the remainder of this chapter the modern geographical names will be adopted to save space on extensive footnotes.

as a stepping stone between Lima and Seville and gained importance as a location for the organisation of large fairs (Williamson 1992).

The first century and a half after the Spanish conquest (1520-1670) were dominated by one of the most tragic events in world history. Sweeping pandemics of smallpox, measles and other "Old World" diseases decimated the original indigenous population (Crosby 2003). The pre-Columbian population figures in the Western hemisphere are subject to a continuing debate in which estimates have been presented ranging from less than 10 to more than 100 million people (Mann 2005). On the basis of colonial sources for the central region of Mexico, Cook and Borah (1963) have estimated that the indigenous population of 25,2 million around 1518 was reduced to ca. 0.7 million in 1623, a decline of 97%.[13] No matter what the exact figures have been, it seems hard to believe that without the disease factor the Spanish had conquered the New World, let alone that they would have been able to retain colonial rule for more than three centuries. The ultimate consequence of the demographic disaster was that indigenous societies either completely disappeared or collapsed under pressure of Iberian military supremacy. Only in the Andean and Meso-American highlands the indigenous peoples were able to keep their cultural heritage alive (Mann 2005, Newson 2006).

Although Spanish interest in the Caribbean islands rapidly dissolved with the conquest of the American mainland, some of the islands such as Cuba (Havana) and Hispaniola (Santo Domingo) remained important because of their strategic location.[14] The original indigenous population had almost completely disappeared by the end of the 16th century and in the 17th century the Caribbean islands set the stage for fierce clashes with the other European seafaring nations, most notably the Dutch, British and French. The Caribbean islands and Panama were under continuous threat of attack and plunder and piracy became endemic. Jamaica was captured by the British in 1655 and Spain ceded Haiti to the French in 1697. In 1762-3 the British also seized Havana and Manila, the farthest outpost of the Spanish empire. Most of the original Spanish Caribbean possessions changed hands as the region became the backbone of a highly profitable sugar economy, where African slaves replaced the original

13 According to the population estimates of McEvedy and Jones (1978: pp. 269-317) the total American continent inhabited ca. 14 million souls, of which ca. 3 to 4 million lived in the Aztec Empire and a similar number in the Inca Empire. In the early 17th century a new continental equilibrium was reached at ca. 11.5 million souls, 80% of 1500. In the early 16th century ca. 250.000 Spaniards reigned over 9 million natives in the Spanish territories. Although, these are very conservative estimates compared to studies claiming that pre-Columbian population figures were in between 90 to 112 million and that the drop in the native population amounted to over 90% of the original level (Newson 2006), even these figures are highly impressive.

14 As a result of the strong clock-wise currents of Atlantic winds, Santo Domingo was best located for the first stop of ships having crossed the Atlantic on their way to the New World. The location of Havana was suitable as a last stop before the final return voyage. Trade ships uses to sail the Atlantic Ocean once a year back and forth (Macleod 1984).

and European population as the prime source of labour. Only Cuba and Puerto Rico remained in Spanish hands until the late 19th century. The development of slave-based sugar colonies markedly diverted the course of Caribbean history from the mainland, where Spanish domination was uncontested until 1810 (Stinchcombe 1995, Bakewell 2004).

The peripheral areas of the Spanish American empire were, by definition, more loosely integrated into its administrative and commercial body. The region of Costa Rica remained a backwater with marginal settlements throughout the 16th to 18th century. The Spanish also showed little interest in the sparsely populated North Eastern part of the South American continent. After all, the real treasures were located in the Andean highlands (Elliot 1984). Argentina and Uruguay remained almost entirely unexplored during the colonial era. Neither the Argentinean Pampas, nor the Amazonian jungle, nor the vast and empty territories of North America seemed to hold promising venues for long run investments.[15] Buenos Aires was a distant outpost of the Spanish American Empire. The peripheral areas lacked (discovered) sources of mineral wealth and large sedentary populations, which could sustain Spanish urban centres. After repeated attempts to annex Florida[16], the Spanish conquistadors lost interest in the barren territories and the bellicose nomadic Indian tribes up North. To the far south, the guerrilla tactics of the Auracanians effectively put the Spanish conquest to a halt at the Chilean river Bio-Bio: only in 1880 armed forces were capable of incorporating the Southern territories into the independent Republic of Chile (Collier and Sater 2004).

The Amazonian rainforest functioned as a natural border between Spanish and Portuguese colonial territory, where the Spanish deliberately turned a blind eye at the illegal expeditions of the Portuguese (i.e. crossing the Tordesillas line in the Amazonian). The vast tropical lowlands and torrid plains of Brazil were mostly inhabited by semi-sedentary tribes or tribes of hunters and gatherers. Portuguese encounters with these people were often hostile, not in the least place because of the cruel character of Portuguese slave-raids. Settlements

15 Numerous expeditions were sent out inspired by tales about El Dorado and the Seven Cities of Cíbola The legend of the man of Gold (El Dorado) inspired Gonzalo Pizarro, the governor of Quito, to cross the Andes into the Amazonian rainforest, where his expedition lost the way and each other. Pizarro eventually returned to Quito. Fransisco de Orellana floated down the entire Amazon river over 3000 kilometre and sailed to Hispaniola. The river received the name Amazon because of the recurring attacks of female warriors on Orellana's expedition. About the Seven Cities of Cíbola it was told that its buildings were encrusted with gold and turquoise. The cities should have been part of yet another Indian Empire to be located in the areas of present-day New Mexico and Arizona. The quest was undertaken in 1540 on behalf of the Viceroy of New Spain. Although the expedition of hundreds of Spaniards and Indians discovered the Grand Canyon, crossed the Rio Grande into Texas and greatly extended the border of the Spanish Empire into North America, the expedition disappointedly returned home, since they had not found what they were looking for. (Williamson 1992: pp. 31-3)

16 The third major attempt led by Hernando de Soto, one of Pizarro's men, finally proved successful in 1539. The Spanish settlements were continuously threatened by the British in the North and the French in the West., but only in 1819 Florida was handed over to the USA as stipulated by the Adams-Onís treaty. In return the USA would release its claims on the Spanish territory of Texas. In 1845 Florida became the 27th state of the USA (Williamson 1992).

were concentrated in the coastal areas under much looser imperial control than the Spanish Viceroyalties. The Portuguese Crown gave clear priority to its expeditions in the East.[17] Brazil gradually evolved into a society dominated by mighty large estate holders, making a fortune in sugar and, later, coffee. The discovery of gold and diamonds in the late 17th and early 18th century enhanced Portuguese interest in its stronghold in the Western hemisphere. Nevertheless, this vast country, covering roughly half of the South American landmass, was inhabited by less than three million souls at the eve of independence in 1821, of which 1.2 million were slaves (Levine 1999).

Thus factors such as location, climate, mineral endowments and, probably most important, the presence of a large sedentary indigenous population created different sets of possibilities and constraints for the evolution of colonial settler societies and consequently affected the nature and impact of colonial institutions in different regions. A categorization of the region in terms of core and periphery is inevitably highly schematic and the centre of gravity in the Spanish American empire shifted to some extent in the 18th century as various regions articulated a strong desire for more autonomy as well,[18] but it serves to point out some of the most crucial intra-regional distinctions that will repeatedly play a role in the remainder of this study.

1) The core regions of the Spanish American empire consisted of (large parts of) present-day Mexico, Guatemala, El Salvador and Ecuador, Peru, Bolivia and Colombia. At the eve of independence these regions hosted, by the standards of those days, rich and stratified societies, in which Creole elites had established vested interests in mining, Atlantic trade and land ownership. The population mix of Indians, Creoles and their common Mestizo offspring

17 The Dutch temporarily occupied the area of Pernambuco in North Eastern Brazil. The Dutch were the major irritant of Portugal's colonial aspirations. At the end of the 16th century the Dutch started a campaign to strip the Portuguese of their colonial possessions in the East. In 1624 the Dutch attacked Portuguese plantations on the Brazilian coast and occupied Pernambuco, however, in 1654 the Dutch were expelled again by combined forces of Portuguese and natives (Williamson 1992)

18 The economic importance of Colombia, based on its gold deposits, the port of Cartagena and its relative geographic isolation from Peru, was recognized in 1739 with the formation of a third independent administrative region, the Viceroyalty of New Granada (including parts of Panama, Venezuela and Ecuador). In response to continuous requests of Buenos Aires to fully exploit its strategic location on the Atlantic coast the Viceroyalty of Rio de la Plata was created. This allowed Buenos Aires with the administrative conditions to develop from a laid back contraband frontier town, into the main commercial and financial centre of the South American continent in the late 18th century. The Spanish colonial administration prescribed that all trade from the Vice-royalty of Peru to Spain and vice versa would pass through Lima in order to collect taxes. This arrangement frustrated the development of Buenos Aires, where a thriving contraband economy developed. The creation of the Vice-royalty of Rio de la Plata and the trade reforms broke the monopoly of Lima merchants on the silver exports from the Bolivian highland, which could be transported to Europe much cheaper via the Rio de la Plata and the port of Buenos Aires. The trade restrictions had caused a deep resentment among the citizens of Buenos Aires towards Spanish royal authorities. This sentiment was an important factor in the leading role of Buenos Aires and the United provinces of South America (later Argentina) in the struggle for independence (Bakewell 2004).

was cast into a vertical social order in which huge gaps in wealth signalled large disparities in social status and political privileges.

2) The plantation economies along the Atlantic coast, in particular in Brazil and the Caribbean islands, form a distinctly different and arguably more diversified core region of European colonial rule in the West. The tropical climate and Atlantic shores provided suitable conditions for the development of sugar plantations based on the exploitation of African slave labour. The plantation economies produced excessive wealth. At the end of the 18th century Barbados and Cuba are estimated to have had a per capita GDP level of 150% and 167% of the US respectively. Haiti was perhaps even the richest country of the world at that time (Engerman and Sokoloff 2000). The organisation of the production process was characterised by extreme forms of human exploitation and social inequality running largely along ethnic lines and persisting far into the post-slavery era (Stinchcombe 1995). The coastal areas of the Guyanas, Venezuela, Colombia and Central America (particularly Belize) also disposed of slave plantations, but these regions remained relative backwaters during the colonial era.

3) In the periphery the initial conditions of inequality were different. Large parts of today's Argentina, Uruguay and Costa Rica had remained unsettled and in the isolated areas of Argentina, Chile and the interior of the Amazonian rain forest, native peoples remained separated from colonial settlers for a long time after independence. Argentina, Uruguay and Costa Rica became typical "immigrant countries" in the 19th century and obtained a predominantly white population. In comparison to the core, a less hierarchic and authoritarian social order evolved in the periphery. The growth and development records of former peripheral states show that in post-independent Latin America a major reversal of fortune has taken place (Engerman and Sokoloff 2000).

4) The status within the Spanish American empire of regions coinciding with today's Venezuela, Honduras, Nicaragua and Paraguay are probably most difficult to classify in a simple core-periphery scheme. Although substantial settler societies developed in these areas contrary to the peripheral areas described above, commercial relations with Spain remained relatively underdeveloped. Large parts of these regions became characterised by relatively autonomous agrarian societies with a specialisation in ranching activities. The relative isolation and lack of control of the mother country gave local governors the power to act rather independently and gave the Creole elite a higher degree of freedom in creating their own "kingdoms" (Bakewell 2004).

This very crude and inevitably somewhat oversimplified classification of colonial settler societies in core and periphery is, nevertheless, indispensable for the evaluation of various explanations of the historical evolution of inequality in Latin America. It shows that some of the ultimate determinants of inequality that are often propagated in literature, such as for instance the natural endowments or colonial institutions hypotheses (see chapter three, section 3.2) have to account for large intra-regional variety in order to be acceptable. In the next sections some of the more shared "Latin" initial conditions will be discussed.

2.3 Mercantilism and resource extraction

"*Trade is the sacrifice of the Rich and the Poor; those engaged in it achieve the level of profits they desire, without effort and without stepping out of their Houses; the abundance of ships arriving at Veracruz gives them no cause to cheapen goods they hold in the Capital because the Wealthy and Powerful monopolize goods to the prejudice of those who are not, and by storing them in their Warehouses they price them as they wish and exploit the rest of Humanity*."

Duque de Linares, Viceroy of New Spain, 1716 (cited in Stein and Stein 1970: p. 28).

The mountain plains of Mexico (San Luis, Zacatecas) and Bolivia (Potosi) hosted the world's richest disclosed silver deposits of the early modern era. Around 1540 the early gold mining activities in the Caribbean were completely overshadowed by the exploitation of the silver mines in the hinterlands of Latin America. Silver was the ultimate fuel for the defence and control of such a vast colonial empire for more than three centuries. Thanks to its status of prime producer-exporter of silver, Mexico became the jewel in the crown of Spanish America (Hamnett 1999). In exchange for bullion Spain supplied its colonies with wheat, wine, olive oil and home produced manufactures such as furniture, iron wares, coarse and finished cloth and regional food and craft specialties (Macleod 1984: p. 367). Spain also provided the mercury needed to extract silver ore and this natural monopoly gave the mother country a probate instrument of control.

The commercial system of Spain was designed to maximize the flow of mineral wealth to the Iberian Peninsula. Compared to the silver trade, the export of agricultural products such as sugar, hides, tobacco, cotton, indigo, cocoa and coffee never gained more than marginal importance. The *Carrera de Indias* was the lifeline of Spain's economic and military power as it carried more than 90% of the total silver production across the Atlantic (Donghi 1993). One fifth of all mineral revenues were immediately confiscated by the

Spanish Crown via the *quinto real (*the royal fifth*)*, which was not the only, but certainly the most lucrative royal tax.

According to truthful mercantilist trade policies the terms of trade were set in favour of the motherland. Spanish merchants enjoyed the fruits of monopoly grants and price manipulation which ultimately followed from a credible threat to use coercive power in case of illegitimate economic exchange. Anxious for the envy of its European neighbour states, Spain tried to keep the door to its colonial empire tightly locked. Monopolies on colonial trade were granted to a handful of Spanish merchants and only a few ports were allowed to provide entry and exit to ocean vessels.[19] Mercantilism especially constrained colonial economic development where the merchant elite feared potential competitive threats.

In New Spain the colonial administration did not allow the development of local manufacturing industries competing with overpriced Spanish imports (Stavrianos 1981: pp. 91-8). But in regions that were less accessible from Europe, in particular on the Pacific coast, the products that could be profitably imported from Europe were much more limited. Wine and (olive) oil, needed for daily life consumption and sacramental purposes, could not reach Lima or Santiago in a proper condition. As a result, these crops flourished in Peru and Chile whereas they were forbidden in New Spain and the Caribbean until independence[20] (Macleod 1984: pp. 353-4). Other sectors of the agrarian economy, such as livestock production, were not confronted with production restrictions and greatly benefited from local demand for meat, milk and hides. According to Crosby, the introduction of European livestock in the vast plains of America resulted in one of the biggest changes in landscape ever recorded in human history (Crosby 2003: pp. 74-113).

Colonial trade and production restrictions were not prohibitive to economic development in the long run. After passing the trough of the demographic crises in the mid 17th century, the enhanced intra-regional integration of markets induced a positive spiral of commerce, scale economies and division of labour. Transatlantic trade induced investments in infrastructure and raised the demand for consumption goods and intermediate services, while rural areas in the vicinity of commercial and mining centres flourished as a result of the urban demand for labour, food, mules, hides and cash crops such as tobacco and indigo. Moreover, trade restrictions were increasingly circumvented by smuggling activities. Already in the 17th century the total value of contraband trade, headed by the Dutch and the British, surpassed the "official" trade with the Iberian Peninsula (Williamson 1992).

19 Among these were Veracruz (Mexico), Manila (Philippines), Lima (Peru), Santiago (Chile), Nombre de Dios which was later replaced by Portobello (Panama), Santo Domingo (Hispaniola) and Havana (Cuba) (Bakewell 2004).

20 An average voyage from Seville to Veracruz lasted about two and a half months, yet crossing the Isthmus and the Pacific took almost double time. Trade with the administrative outpost Manila was therefore confined to products with the highest margins such as Chinese silks, rare spices and precious gems (Macleod 1984: pp. 353-5)

At the other side of the Atlantic Spain's domestic economy fell into a long run depression in the 17th and 18th centuries. The silver revenues reached a temporary peak in the 1620/30's and started to decline at a moment when exorbitant warfare expenses of the Habsburgs depleted Spain's treasury. Financial deficits enforced the Habsburg administration to squeeze its European and American subjects in order to pay the interest on the loans of German and Genoese bankers and keep up their lenders confidence. With the advantage of hindsight the 17th century marked a reversal in economic power between the motherland and its overseas empire. Spanish industrial development was too weak to keep up with the growing demands in the Americas and Seville, more and more, became an entrepôt of Atlantic trade dominated by foreign, mainly Dutch and British, merchants (Bakewell 2004).

With the Bourbon reforms in the 18th century (1759-88), the central administration in Spain attempted to reinforce colonial revenues and re-legitimize Spanish imperial rule. The reforms involved a program of bureaucratic centralisation to improve the effectiveness of taxation and broaden the tax base by releasing colonial trade restrictions. At that time, a substantial part of the Creole elite was in favour of a complete abolishment of colonial trade monopolies altogether. And during the wars of independence in the early 19th century, the balance of economic power had shifted definitively towards the American side. The disintegration of the colonial empire induced a long lasting economic recession in the first half of the 19th century, in which the resolution of regional markets, rather than the loss of the crumbling Spanish market, proved a major cause of the economic downturn (Irigoin 2003).

Mercantilist trade policies had some important distributional implications. These can be summed up in two categories, of which the one arguably had a larger effect in the long run than the other:

1) The regulated exchange of mineral wealth for European manufacturing imports obstructed the development of a proto-industrial sector, especially in those regions where such sectors would pose a competitive threat. The physical and commercial infrastructure that was set up to connect the commercial centres in the interior with the Atlantic coastline (and ultimately with Seville) may also have reduced economic linkages within the local hinterland. However, the positive economic dynamics generated by the integration of markets across the continent, especially from the mid-17th century onwards, is likely to have counterbalanced the potential adverse effects of colonial trade and production restrictions. In this respect geographic barriers may have been much more decisive in the spatial organisation of the economy than colonial trade prescriptions.

2) A probably more far-reaching consequence of Mercantilist policies was that it provided legitimacy to the *institutionalisation of monopolies.* This led to a concentration of resources, profits, know-how and legal privileges in the hands of a small elite. The concentration of surplus rents negatively affected the spread of consumptive demand for industrial products (Murphy et al. 1989) and it also resulted in large and rigid capital market imperfections. Access to capital was limited to a legally confined class of mine-owners, landowners, merchants and bureaucrats. This class faced no incentives to broaden the economic structure and enhance the investment climate for a grassroots entrepreneurial class. As will be argued in chapter four, the concentration of wealth and assets also, in the very long run, created an adverse incentive structure for the provision of such crucial public goods as education.

It should again be stressed that the impact of state intervention in commerce and production differed widely across the region. Portuguese rule in Brazil retained a much looser character with a larger degree of freedom for the local land and slave owning elites, while the absence of mines or a distant location also weakened the impact of centralist political control. Yet, the contrast with the British settlements along the Northeast coast of North America was sharper. In the British colonies the financial and commercial infrastructure was accessible for the majority of settlers, rather than for a privileged elite. Political decisions were mostly taken at a community level and became effective in a loose federal structure of colonial governance, rather than the centralist structure put in place by the Spanish Crown, in which vertical relations were predominant. The open access to export and factor markets is one of the major distinguishing factors in the colonial history of Spain and Great Britain. This distinction in political culture is widely regarded as one of the key explanations for the divergent paths of development and distribution observed in the post-colonial era (Landes 1998, Lal 1998, North et al. 2000).

2.4 The institutionalisation of inequality

"*In Spain it is a sort of title of nobility to descend neither from Jews nor Moors; in America skin, more or less white, indicates a man's rank in society*"

Alexander von Humboldt, 1807 (cited in Stein and Stein 1970: p. 56)

The extremely isolated location of the mines in Potosi (Bolivia) in the Andean highlands did not inhibit the export of large amounts of silver via Lima and Panama to Seville. Yet, without the coercion of Indian labour the exploitation of the silver mines would have been entirely

unfeasible. Labour was not only essential for work in the mines, but also in trade and transportation and in food crop production, where surpluses were needed to sustain the labour force involved in non-agricultural activities. The chronic scarcity of indigenous labour supplies and their little interest in wage labour engagements was one of the biggest enduring concerns of the colonial administration. The various types of coercive labour market institutions that were put in place to enforce a constant supply of labour, contributed largely to, what I call the *institutionalisation of inequality*. This means the formal and informal legitimisation of a social order in which exclusive economic and political privileges flowed together and ethnic background formed the major determinant of social status and political discrimination.

Initially, Ferdinand and Isabella favoured a system of free wage labour, which recognized the status of the Indian population as free subjects of the Spanish catholic monarchy and put an end to the Columbian practice of violent slave-raids. As the Indian population was not accustomed to wage labour and refused to engage in it,[21] the *encomienda system* was introduced with the objective to balance the labour demands of colonial settlers and esteemed Catholic values.[22] The *encomendero* was entitled to demand labour services from the Indians living in a specifically assigned territory and in return, the encomendero was held to pay decent wages, protect and evangelize his labour force. As the monarchy was reluctant to hand over power to a new class of influential feudal lords (as it had done during the six centuries of the *Reconquista* of the Iberian peninsula), the encomienda territories were not given in possession and the encomienda rights were not inheritable.

However, the supply of indigenous labour declined dramatically with the unfolding demographic catastrophe. Indeed, the disease factor proved to be an important ally in the process of conquest, but became a real burden in collecting its trophies (Mann 2005). Already in the second half of the 16th century the encomienda system was completely undermined by surging labour demands and declining supplies. To solve the problem of labour shortage and compensate the encomenderos for "their losses", the Crown started to grant rights to collect tribute and, even more important, started to grant rights of land ownership at a large scale.

The distribution of Indian labour became further rationalized by the *repartimiento system*,[23] allocating Indians on the basis of prevailing requests for labour (all year round and

21 The Indian civilizations were not familiar with a monetary economy, nor with private property. The Aztec and Inca economies were based on systems of reciprocity, making use of barter and mandatory tributes of labour and kind.
22 The term "encomienda" literally means "assignment" (of Indians).
23 Literally "repartir" means "to distribute". Before 1542 the terms encomienda and repartimiento were synonym, after 1542 the term encomienda referred to the payment of tribute in money or kind and repartimiento referred to the labour tribute. The repartimiento was, in fact, a continuation of the pre-Columbian system of labour tribute, which was collectively organized by the ruling Aztec and Inca

seasonal). Each Indian community was obliged to supply 2 to 4% of its population for compulsory labour. The allocation of indigenous labour was organised by the local colonial administration under the supervision of royal administrators. Obviously, priority was given to the labour demands of the mine owners, but in theory any Spaniard could apply to the authorities for the labour service of a specific number of Indians, for a specific time and task.

Under the repartimiento system the Indian labourers were paid a minimum wage, which allowed them to pay tribute to their encomenderos, the monarchy and the church. Indians were further compelled to buy rationed portions of Spanish merchandise and buy back the agricultural tribute, primarily maize, that they themselves produced. In case wages did not suffice to fulfil their monetary obligations, employers could provide loans in exchange for extra labour services. The institution of debt peonage proved to be very effective to turn the encomendero's right on temporary Indian labour services into a continuous right, as accumulated debts were passed on from one generation to the next generation and became a permanent burden. Although the Spanish Crown was, in first instance, committed to prevent the rise of a powerful class of landlords, it started to use land grants on a large scale as a political instrument at the moment the encomienda system failed to hold (Williamson 1992). The combination of land grants and the feudalisation of the indigenous labour force laid the foundation for the specific colonial legacy of land inequality, which will be further analysed in chapter three (North et al. 2000).

In spite of the evident discriminatory labour market policies, the Indians, in theory, remained free subjects of the Spanish crown with their own legal system. The Indian laws were tolerated as long as it did not conflict with Spanish interests. For cases between Spaniards and Indians a special court was installed. This division of legal estates, to a large extent, helped to prevent a complete disintegration of the traditional indigenous social order, with its own languages, arts, codes and rituals. In several respects this dualism lives on until today, not in the least place because of the pursued policy of physical separation.

The Spanish founded their own towns and the Indians remained in their villages, or fled away from their old cities to the countryside. Hence, the colonial town became the nucleus of Hispanic culture in the New World. The layout of a newly built colonial town had to conform to the prescriptions (*traza*) the *adelantado*[24] carried with him on the expedition. The traza stated that the centre of each town should be formed by a rectangular square (*plaza*)

elites and was one of the pillars of the imperial territorial integration. In Peru this system was referred to as the "Mit'a", in Mexico it was known as the "Cautequil".

24 The expeditions of conquistadores predominantly consisted of free participants supporting the expedition with financial and military means under the leadership of a chieftain, the so-called adelantado ("Adelantir" means "to advance"). If an expedition chose to settle they built a new town for Spanish residents (vecinos), using Indian labour when available. The adelantado appointed the municipal council (cabildo), the royal notary and the priest on behalf of the royal authority.

hosting the residence of the governor, the municipality, the church, the prison and the houses of the principal encomenderos (Williamson 1992: pp. 77-81). The town was further composed of regular blocks of houses. The distance of the residences to the central plaza reflected the social position of its inhabitants. In the backstreets of the colonial town, new quarters arose for Indians, families of mixed blood or freed African slaves, who were working as servants in Spanish residences, specialised in handicrafts or provided badly needed hands for the tough work in construction and transport.

Over centuries much of the formal separation of living spheres disappeared. Deliberate immigration policies to directed at Spanish marriage candidates, the norms of racial purity and the illegitimacy of mixed marriages (i.e. between whites and non-whites) could not prevent that large amounts of Spanish-Indian children were born. In fact, before the dawn of the colonial empire the Mestizos (literally "the mixed") had become the largest group in Latin America. The social position of the Mestizos was highly diffuse, as they had to carry on with the stigma and prejudices of being a product of an illegitimate relation. If they were so fortunate to be born in a wealthy and influential family they were likely to receive education and to be included in their fathers' will. The unfortunate were not recognized and expelled. Indeed, skin-colour was a powerful determinant of fortune: the closer to white the better.

Along the Atlantic coasts of tropical Central America and South America, and in particular on the Caribbean islands, the demand for labour initiated a different process of labour mobilization. As a result of European diseases and the practice of violence by the early conquistadores, indigenous peoples such as the Arawak and Caribs, were reduced to numbers too low for recovery (Crosby 2003). The import of African slaves formed the ultimate solution to the labour shortage problem. Whereas Indians had a clear productivity advantage in the highlands, African slaves were better qualified for the tough plantation work in tropical lowland areas. Hence, the transition to plantation economies radically changed the population composition of the Caribbean. Barbados, for example, first served as a British population valve and was almost exclusively occupied by British family farmers. Yet, in just a few decades around 1650 the island transformed into the prime slave driven sugar economy of the world (Eltis 2000, Stinchcombe 1995).

The slave trade dominated by the Dutch, British and Portuguese, rapidly intensified in the second half of the 17th century and peaked in the middle of the 18th century. The import of African slaves on the Caribbean islands raised its population from 200,000 (75% Europeans) to a mere 500,000 (20% Europeans, 80% Africans) in the 17th century. The disgraceful transport and labour conditions and highly unbalanced sex ratio rendered the African slave population unsustainable, upholding a constant request for new supplies. Between 1550 and

1800 the Caribbean islands received an estimated 4 million Africans. Another 3.5 million Africans ended up in Brazil and 0.5 million in the Southern States of the USA (Eltis 2000).

The arrival of African slaves added an entire new layer to the social pyramid in Spanish America. Contrary to the Indians, Africans were not allowed to manage their own affairs and were neglected as potential converts by Catholic missionaries who had little faith in their eligibility to Christianity, which indicated their inferior social position. For the two new *castas* (mixed groups) of Mulattos (Black-white) and Zambos (Black-Indian) the situation was not much better. Colonial labour market institutions in Latin America may have been shaped in response to chronic labour shortages, but it was the common approval of racial inequality inherent in the prevailing cultural value system that legitimized the repression of Indian and African labour to the benefit of European colonists (Domar 1970, Demsetz 2000).

Table 2.1 presents the composition of the Latin American population at the eve of independence and shows that in all major regions of Latin America the descendants of Europeans constituted a considerable minority. However, the practice of extraction in a centralised system of political control does not allow an overload of extractors. Therefore, it is not surprising that among the descendents of European colonists differences in income, wealth and social status grew large as well.

Table 2.1: The composition of population in Latin America, 1820

	Indigenous	White	Mestizo	Black and Mulatto
Mexico	54%	19%	27%	0%
Brazil	11%	33%	0%	55%
Caribbean	0%	19%	0%	81%
Other Spanish America*	52%	19%	23%	5%
Total Latin America	**37%**	**22%**	**16%**	**24%**

Source: Maddison 2003: p. 115

In the early phase of colonisation in the 16th century the prospects of fortune attracted a rapidly increasing stream of new immigrants. Yet, as soon as the best jobs and tracts of land were divided among the earliest conquest-settlers, the chances of social mobility started to decline and increasingly depended on birth and entrepreneurship. A considerable share of the later newcomers faced hard times to earn a living, if they survived the long journey in the first place. The Creoles thus became a highly multilayered social group consisting of royally appointed lawyers and administrators, wealthy merchants and petty traders, educated clergymen and fortune seeking soldiers, sailors, jailors and prisoners. The lack of acceptable positions drove many landless Creoles into the private armies of powerful lords, waiting for a supreme moment of military glory and recognition.

Between these pronounced vertical layers of society the Catholic church played a mediating role. The role of the church was crucial in the maintenance of social cohesion in the hierarchic colonial settler societies as true faith could be adopted regardless of colour and for God all men are equal. Although missionaries largely agreed on the distinctions between Indians and Africans and acknowledged the prevalence of social inequality in earthly matters, by emphasizing that in the supreme spiritual order equity rules, it not only brought hope to hopeless people it also, intentionally or unintentionally, helped to consolidate social inequity.

As the secular clergy took over most of the important tasks and positions of the regular clergy[25] a fine-coarse tax system was developed to raise a solid material foundation for the church's infinite presence in the New World. The secular clergy's material desires were responsible for a creeping worldliness in ecclesiastical affairs. The church became the largest landowner in Latin America via inheritance and private grants. The prime source of revenue was the tithe, an ecclesiastical tax raised among all citizens. Parish priests further thickened their purse demanding heavy fees for the execution of sacraments. The relative wealth of parishes and bishoprics largely depended on the economic prosperity of the region and the relative amount of taxable people. Many lower parishes could not afford clergy's salaries and priests were often involved in commercial affairs to supplement their income. Cathedral chapters claimed the lion-share of the tithes, an institutional arrangement, which contributed to the redistribution of resources from poor peripheral areas to such rich urban centres as Lima, Mexico and Santiago. The splendour of cathedrals in these cities still reflects the centrifugal forces of mercantilism and Catholicism alike (van Oss 2003: p. 98, Lal 1998, Bakewell 2004).

To sum up, the social order that evolved during three centuries of colonial rule was nested into a complex set of local and central institutions arranging the coexistence of conquistadores and subjugated, of noblemen and commoners, of man and women, and the coexistence of different ethnic groups and their intermingled descendants. State intervention in the markets

[25] The regular orders, also known as the mendicant orders, such as the Franciscans, Dominicans, Augustinians and Jesuits, were the first to cross the Atlantic to spread Christian faith. The mendicant orders were much more flexible than the heavy bureaucratic apparatus of the secular church and, consequently, more effective in the early stages of missionary activity. The attitude of the Church towards the native peoples varied largely according to the personal perceptions of individual clergymen. In the eyes of some priests the Indians were wild and unreasonable people, others regarded them as noble savages or innocent children. The initial aim of complete eradication of pagan beliefs, rituals and art soon appeared to be an illusion. Some religious fanatics used violence to convert natives, but generally the clergy was reluctant to use coercion. The regular orders were among the fiercest criticasters of Indian exploitation, the abuse of power of colonial forces and the most influential protagonists of natives' rights obeying. Bartolomé de las Casas, who transformed from bloody conquistador into a Dominican friar who did not cease to fight for a correct treatment of Indians, became the ultimate symbol of their struggle. Along with the Bible the orders spread different sorts of knowledge on primitive health care, agricultural production techniques and the Spanish language through their education system.

for labour and land had a dramatic impact on the allocation of resources. Institutions such as slavery, serfdom, debt peonage and other forms of bounded labour and restrictions on labour mobility (and human freedom) were inextricably connected to a highly unequal distribution of land. In the long run, these institutions were the major shaping force of local rural societies, which to a large extent survived into the 20th century, and to a lesser extent up to the 21st century. This rural structure, in all its various appearances, differed largely from the much more scattered and concentrated export-oriented agrarian enterprises, since the existence of the latter depended crucially on world market developments. For this reason the Caribbean islands, where commercial slave plantations dominated the agricultural sector, are most deviant from the pattern described above.

2.5 The disintegration of the colonial empire in the 19th century

The struggle for independence broke out in the early 19th century, when Spain was effectively disconnected from its overseas territories by the British maritime blockade of Napoleonic Europe. Between 1810 and 1829 virtually the entire region gained independence. Since the start of the 17th century the Iberian colonial empires suffered from enduring British, Dutch and French attempts to weaken their position. The defence expenses to protect vulnerable coastal settlements, ports and ocean convoys increased sharply with burgeoning European intrusions, predominantly in the West Indies. The viability of Spain's military and economic supremacy in Europe was, in the meantime, undermined by seemingly never ending religious wars. However, the largest threat to the stability of the Iberian colonial empires came from within. The Bourbon reforms in the second half of the 18th century came too late to the turn the tide of mounting dissatisfaction with the incapable imperial administration. Spanish rule became increasingly perceived as a barrier to further domestic economic development and Spanish taxes became increasingly regarded as "exploitative". Enlightenment ideals of independence and civil liberty that flew over from Europe further enhanced the political disparities between the "reformists" and the "royalists" (Williamson 1992, Donghi 1993, Bakewell 2004).

When the strings with the Iberian Peninsula were cut, the empire disintegrated and plunged into a long lasting recession. Enduring border conflicts, civil strives and political instability pre-empted the development of the independent nation states at least until the middle of the 19th century.[26] The disintegration of Spanish America in the early 19th century

[26] To give just a few examples of the great geopolitical changes during the 19th century: the state of Uruguay (1828) thanks its existence to the need of having a buffer state between Argentina and Brazil. The present smaller Central American states formed a Central American union after independence,

mainly took place along the existing administrative boundaries of the Viceroyalties and audiencias, so that much of the intra-regional political and economic disparities that had developed during the colonial era, in first instance, lived on in the new nations of independent Latin America.

Only Brazil remained unified in spite of separatist sentiments. When Napoleonic forces invaded the Portuguese royal family fled from Lisbon to Brazil and managed to retain a core alliance between the various factions of the Brazilian elite. The fact that the (slave) population of African descent largely outnumbered the white minority may have played a crucial role in this process (Levine 1999). The slave economies in the Caribbean did not engage directly in the struggle for independence and retained their status of European colony well into the 19th or 20th century.

The definite decline of peninsular supervision over Latin American affairs resulted in a chaotic and insecure process of state formation and nation building. In particular in those regions where a multitude of parties and elite factions had vested interests in wealth and political power, the demarcation of national borders and the establishment of new national identities was a time and blood consuming process. The disintegration of the colonial economic union (in terms of its fiscal, monetary and trade system) requested profound reforms to create new, yet severely contested, national economic institutions. Virtually all of the new regimes coped with chronic budget deficits, monetary instability and increasing poverty as a result of the economic recession, which further aggravated political and military tensions.

The forces of disintegration did not destroy the cultural integration established during the colonial era. Spanish America had developed into an economic and political unit in which the Spanish tongue had become the dominant medium of communication. The Catholic church had become an omni-present spiritual instance, enhancing a rapid diffusion of the rich Spanish-Indian mental cultures and arts. The unity of Latin America outgrew the colonial ties which had laid its foundation. The success of this unity eventually re-enforced the struggle for independence, but contrary to the US, the perceived shared identity was insufficient to prevent its disintegration (Fernandez-Armesto 2003).

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which proved unstable and gradually fell apart until its final abolition in 1838. Bolivia lost large parts of its former territory, its access to the Pacific Ocean and its control over the rich nitrate deposits in the Atacama dessert to Chile in the war of the Pacific of 1879, in which Peru was also involved. Panama gained independence from Colombia only in 1903 with political assistance of US president Theodore Roosevelt. Mexico lost a substantial part of its northern territories in the US-Mexican war of 1846-1848. The Dominican Republic gained independence in 1821 but was immediately occupied by Haitian forces for the next 22 years until 1844, when it regained independence. In 1861 it voluntarily returned to the Spanish empire, but stepped out again in 1865 after a new independence war.

Although the rise of a new political order may have risen expectations of social mobility, considerable improvements in the position of the poor could hardly be recorded when peace had been restored. The wars of independence were really an affair of the Creole elite, rather than a revolution of the common people. When the dust had settled the position of the Creole elites who had survived the post-independence civil wars, was only further strengthened. Real social change was to be preceded by changes in the rigid feudal labour relations that were so strongly embedded in the colonial rural economy. Yet, in Brazil slavery was only abolished in 1888 and nowhere did independence put an end to the practice of debt peonage, racial discrimination or social exclusion.[27] In the Caribbean most of the colonial institutions remained in tact. The slave revolt of 1791 in Haiti, indeed, is the only example of a successful social revolution, which in the end did not put an end to social inequality and poverty either.[28]

A more profound transition process occurred during the last decades of the 19th century (Bethell 1986, Thorp 1998). Global markets rapidly opened up as a result of technological innovation (such as steamships and refrigerators) and subsequent declining transportation costs. The favourable growth prospects of the region also attracted huge inflows of foreign capital, mainly British capital (Glade 1986, Obstfeld and Taylor 2003, Taylor 2006). Immigrants from Southern Europe seized the opportunity to cross the Atlantic in the expectation of improved living standards. The process of industrialisation in Western Europe and North America was well underway, which generated unprecedented levels of demand for raw materials. Latin America was, for the first time, able to reap the benefits of its comparative advantage in natural resources and use its Atlantic connections for the better. Globalisation also spurred the *reversal of fortune* within the region. The former colonial periphery became the richest part of independent Latin America (Acemoglu et al. 2002).

Although the distribution of the trade profits remained largely concentrated in the pockets of the large land owners (O'Rourke and Williamson 1999), the economic dynamics of export and output growth went together with increasing structural change, including massive demographic growth. Globalisation also enhanced the diffusion of socialist ideologies and labour movements, which increasingly confronted the political elite with the unsustainable features of an exclusionary political culture.

[27] For instance, General Roca received the free hand to exterminate nomadic Indian tribes in Southern Argentina in several campaigns during the 1870's and 1880's. Such campaigns directed against indigenous peoples repeatedly took place in several LAC's during the 20th century (Humphreys 1946, Hillman 2005)

[28] Ironically, Haiti nowadays is the poorest country in the Western hemisphere.

2.6 Conclusion

In this chapter I have introduced the term *institutionalisation of inequality* to indicate that inequality in colonial Latin America was deeply rooted in the formal and informal rules constituting its social, economic and political order, shaping peoples social orientation along ethnic lines. In the Latin American colonial settler society economic and political power were largely overlapping. Yet, the legacy of centralist and monopolistic control of the Spanish Crown, and the group of loyalists that guaranteed the stability of the administrative system, resulted in a fairly uneven distribution of assets and access to land, capital and economic privileges among the Creole population as well. Although colonial settlers and their descendants all enjoyed the freedom to move around and offer their labour as they wished, compared to the extent of equity, political participation and market access enjoyed by British American citizens in the colonial era, the social dispersion among the Creoles was large and the social position of the elite was highly exclusive.

The initial conditions of inequality in Latin America have mainly been described in terms of factor mobility. It has been noted throughout this chapter that factor market regulations differed widely depending on a broad set of local conditions and specific historical developments. The most important conditions can be summarized into three categories:

1) Natural resource endowments conditioned the production for the export market. In those regions where extractive activities developed, the distribution of wealth became more skewed and there was a greater chance for the institutionalisation of monopolies. This also meant that the stakes of the elite in the political and social status quo were comparatively high. However, when taking the entire Latin American region together, the mining and slave plantation areas were concentrated spots and the number of colonial settlers involved were relatively small, especially when Iberian immigration continued to increase the number of colonial settlers while the extent of silver exports reached its peak already in the first half of the 17th century. Only in the case of export products with extremely high profit margins, such as the silver ore from the mines of Potosi, the barriers of distance could be overcome, but for agricultural trade location was much more decisive.

2) Given pre-modern communication and transport technologies, the relative distance (physical and geographic) to the Iberian Peninsula, not only conditioned the integration of regions in the Atlantic economy, but also determined the effectiveness of central monarchical supervision. As distances increased communication also became more ineffective and costly. Consequently, in the remote areas the impact of centralist policies was lower and the degree

of freedom to develop local institutions was higher. This did not necessarily mean that the social order was less repressive, and certainly not that the mobility of labour was larger than in those areas that fell under more direct control of the colonial state.

3) The composition of the population and the influence of indigenous institutions on colonial policies (and institutions) arguably formed the major source of variation in colonial state development across the region. In some areas the presence of nomadic tribes adopting guerrilla warfare tactics effectively prohibited the further expansion of the Iberian conquest. In other areas, indigenous people were unable to escape from slave raids and, most important, European diseases. However, in a substantial part of the Spanish empire indigenous people and their institutions survived the confrontation with colonialism. In these areas the colonial administration faced a unique set of opportunities and constraints. The heritage of well-developed governance structures, urban culture and diversified economies of the advanced Indian empires provide a perfect vehicle for wealth accumulation, which undoubtedly contributed to the institutionalisation of inequality.

On the other hand, the presence of dense indigenous populations largely outnumbering the groups of early colonists, required a much more sophisticated organisation of the system of political control. Some of the institutional outcomes were reflected by the separation of Spanish and Indian estates, the introduction of the encomienda system on the basis of the pre-colonial tax and labour service system and the decrees of the Spanish Crown against abuse of its American subjects. Yet, the demographic disaster in the 16th and first half of the 17th century dramatically changed the balance of power and, inevitably, had a tremendous impact on colonial institutional development. The next chapter discusses some of its consequences for the evolution of colonial land market institutions.

Chapter 3

The Colonial Roots of Land Inequality: Geography, Factor Endowments or Institutions?

3.1 Introduction

Land inequality constituted the backbone of wealth and asset inequality in the colonial era. The adverse effects of land inequality on rural development have been widely documented. In the post-independence era extremely low shares of land ownership[29] and restricted access to land were sustained by complicated and corrupted procedures to obtain legal title to land, hampering transactions and investments in land and supporting the phenomenon of squatting (De Soto 2000, Kay 2001, FAO 1971). Land market imperfections reduced the economic perspectives and chances of social mobility of people in the countryside and contributed to the persistence of rural poverty and rural-urban inequality (World Bank 2004, Morley 2001). Agrarian reforms aimed at a redistribution of land towards landless peasants, were often "incomplete" and therefore ineffective and sometimes even counterproductive (de Janvry and Sadoulet 2002). The failure of land market institutions to optimize rural development is best revealed by the many latifundias laying waste in speculation of rising land prices. Paradoxically, in a region with such abundant land endowments it seemed harder than almost anywhere else to obtain a piece of land for the cultivation of crops (Cardoso and Helwege 1992: pp. 250-63).

This chapter is devoted to the question why land inequality has become such a salient feature of Latin American society. Literature pays wide attention to the role of local geographic and endowment characteristics and the specific Iberian colonial institutions as decisive initial conditions of pervasive inequality and growth retardation in Latin America, in which the issue of land inequality plays a key role (Sokoloff and Engerman 2000, 2005, North et al. 2000). However, the emphasis is placed in different ways. Some authors tend to stress the importance of the local endowment structure, whereas others focus on the nature of colonial policies designed in the motherland. The comparative assessment presented in this

[29] To illustrate this point: Chile is often claimed to have had the greatest monopolisation of agricultural land in the world around in the 19th and early 20th centuries. In Chile in 1900 haciendas occupied more than 75% of all agricultural land. In 1917 0.46% of all holdings purportedly owned more than half of all land, while the *minifundios*, close to 60% of all farms owned ca. 1.5% of all land (Collier and Sater 2004: p. 158, Wright 1982: p. 125). Sokoloff and Engerman (2000) have estimated that in Mexico the percentage of land owners is 2.4% of all rural households around 1910, which compares to 74.5% in the USA in 1900 and 87.1% in Canada in 1901.

chapter adds two arguments to this discussion. First, the nature and causes of land inequality in LAC's are more differentiated than often suggested. Second, the role of the indigenous population and pre-colonial institutions in shaping the political economic context in which land inequality evolved requires more attention.

The colonial roots of land inequality will be examined in two steps. In the first three sections, 3.2 to 3.4, the land inequality data are introduced, interpreted and various hypotheses regarding the evolution of land inequality in a colonial context are discussed and tested in a multivariate cross-country regression framework. Given the overt limitations of the land distribution data and the constraints posed by quantitative definitions of complex institutional variables, a comparative case study approach is adopted in the second part of the chapter. Section 3.5 studies the evolution of land inequality in three former British colonies: Malaysia, Sierra Leone and Zambia. It is argued that each country represents a distinct model of land inequality in a colonial setting. These model countries offer valuable insights for the evaluation of land inequality in colonial Latin America, which are discussed in section 3.6. Section 3.7 offers the conclusion.

3.2 Perspectives on the colonial roots of Latin American land inequality

The "historical laboratory" of the post-colonial American growth divergence offers a good opportunity to evaluate the role of land inequality as an initial condition of long run economic development. The egalitarian distribution of land in the northern regions of British North America revealed a remarkable contrast with the unequal distribution of land in Spanish America. However, literature does not fully agree on the determinants of land distribution in the American colonial context. Some studies focus on the local structure of endowments, including both geographic conditions, natural resources and production factors. Other studies emphasize the role of colonial policies and the overseas transmission of varying metropolitan institutions to explain the evolution of land inequality in Latin America as opposed to North British America. This section discusses the core ideas of these two perspectives, which have been, for convenience mainly, labelled as the endowments perspective and the metropolitan institutions perspective.

The endowments perspective stresses, among other things, the impact of local geographical conditions. Temperate climates are generally better suited to produce food crops such as wheat or maize. In a state of pre-modern agricultural technology the cultivation of these types of crops is subject to constant returns to scale. Tropical areas are generally better fit to produce cash crops such as sugar, tobacco, coffee, cocoa, rubber or bananas that are subject to

economies of scale. Testing the hypothesis of Sokoloff and Engerman (2005) that land endowments of Latin America lent themselves to commodities featuring economies of scale and the use of slave labour, Easterly concludes that a natural environment suitable to cash-crop production is associated with high levels of income inequality in the long run (Easterly 2002: pp. 3-4).

In addition, it is argued that the exploitation of abundant mineral resources using indigenous labour contributed to the formation of natural-resource based economies and ethnic and racial heterogeneous societies in Latin America. This scheme of double colonial extraction, i.e. natural resources combined with non-European labour, was absent in the northern parts of British America. As a consequence of these differences in land endowments, Latin American societies became characterised by high levels of inequality in the distribution of assets, social status and political voice. Over time institutions were shaped to preserve the privileges of land owning elites, resulting in a slow and instable process of democratisation, lagged educational development and persistent high levels of inequality (see for example, Engerman and Sokoloff 1997, 2000 and 2005, Leamer et al. 1999, Easterly and Levine 2003).

Apart from geographic conditions the structure of factor endowments is argued to affect the pattern of economic specialisation. The relative supply of land and labour determines relative factor prices. Land abundance invokes labour saving production methods and favours crops that use land extensively. Land scarce and labour abundant economies tend to specialize in labour intensive crops. Relative factor endowments may thus explain the evolution of large land holdings, yet it cannot, by itself, explain land inequality. Domar (1970) introduces a political economic argument stating that throughout history, elites in land abundant countries were facing the problem of recruiting sufficient labour to toil their soil. To prevent landless labourers from moving to the land frontier, landowning elites developed coercive labour market institutions such as serfdom, slavery or permanent debt peonage (Domar 1970, Demsetz 2000).

A complementary strategy to guarantee the supply of scarce labour is to distribute (virgin) land among the elite and restrict access to land of indigenous farmers or landless labourers. In labour abundant countries, on the other hand, elites dispose of more opportunities to extract rents from taxes and trade, without the need to intervene directly into the labour or land market. These arguments support the hypothesis that low levels of population density create incentives to redistribute land in a regressive way. Coercive labour market institutions constrain the development of free factor markets.

The endowments perspective has two major implications for our view on the ultimate causes of land inequality. First, it stresses the role of local conditions, rather than the objectives and policies of the colonial motherland. Second, the evolution of land inequality to a large extent depends on exogenous factors inducing a specific path of institutional and

technological development. Pushing the endowments perspective to its limits, one could argue that, if the geographic location of British North America and Spanish America would have been turned around, this paper would have talked about land inequality as a typical British American, rather than a typical Latin American phenomenon.

The metropolitan institutions perspective rejects the outcome of this counterfactual thought-experiment. Emphasizing the differences in the Spanish and British policies to establish and secure political order in their overseas colonies, it considers the colonial policies of the motherland as the key determinant of colonial institutional development. Whereas in the federal system in British America the British colonial administration guaranteed credible commitments to property rights and promoted the evolution of free markets, in Spanish America a corporatist structure evolved where the supreme authority of the Spanish crown was based on a complex exchange of privileges in turn for services and support of the church, the army and the land owning elites. The degree of centralisation and overseas control was larger in Spanish America than in British America and this distinction was reflected in the institutional arrangements devised to establish political order in colonial society (North et.al. 2000).

The decentralization of power provided settler communities with a large degree of freedom to decide in matters of land distribution. Among the commercial farmers (yeoman) that settled in the northern states of British America a relatively egalitarian agrarian society evolved based on small to medium sized land holdings. The egalitarian land distribution accommodated the production of food crops and the development of agrarian commerce. Moreover, equal access to economic resources played a crucial role in the maintenance of social and political stability among and between consecutive generations of colonial immigrants (Seavoy 2006). The perceived moral imperative of equity contributed to a system of equal representation, which laid the foundation for the rapid development of democracy and education in the post-independent era (North and Thomas 1973).

In Spanish America the Crown monopolized the vast sources of unoccupied land and restricted the land market. Land grants were allocated in reward for support of the administration rather than through a free and competitive land market. The corporatist structure of colonial governance aimed to balance the interests of the church, the army and the land owning elites and increase the dependency of these parties on the supreme authority of the Crown. When the authority of the Spanish Crown fell away in the post-colonial era, political stability was undermined and elites started to compete for pork rather than for production factors according to the rules of free market competition. Since no single group in society was strong enough to gain control, establish credible commitments to property rights and thereby maintain public support for a long period, the political vacuum remained in place

for most of the 19th century. The consequent state of political disorder posed a severe burden to post-independent economic development (North 1988, North et.al. 2000).

The role of the Catholic church in Iberian America further underlines the institutional perspective. The church played a crucial role in the system of colonial governance in Spanish America. In return for extending Iberian settlements to new areas and supporting the local colonial administration, the church obtained land grants from the Crown and also had the right to trade sacraments and salvation in return for land grants of church members. In addition, the church introduced inheritance laws that promoted the enlargement of its real estate as lawful inheritor (Goody 1983, Lal 1998, Van Oss 2003). The enormous concentration of land in the hands of the clergy reflected an institutional system promoting the alienation of land from the (indigenous) rural population towards private persons or institutes. This factor was largely absent in British America.

The metropolitan institutions perspective thus hinges on the differences in the style of colonisation, which is predominantly influenced by the political culture and the institutional design of the colonial administration, rather than the specialities of local conditions. In this view land inequality in Latin America is closely related to the heritage of land distribution in Spain during the centuries of the Reconquista of the Iberian peninsula. The members of the elite, as well as the church, received large grants of land in return for their military and political support during the wars with the Moors. For the Spanish nobility land ownership was the ultimate sign of social status. These political institutions were copied in the overseas colonies (Williamson 1992, Bakewell 2004).

The metropolitan institutions perspective tends to consider colonial land distribution as a political phenomenon, rather than the outcome of potential scale economies or rural economic specialization patterns based on local endowment characteristics. The counterfactual in line with this perspective is that, if Spain would have colonized North America and Britain the South, the British South would have experienced a path of economic development comparable to that of the US, and the US would, at present, be a middle-income country. Of course these perspectives cannot be completely disentangled. Geographical characteristics and factor endowments provoke institutional responses and institutional developments, in turn, may influence factor endowments (albeit in more limited directions). Rather it is a matter of emphasis one wishes to place on either of both views. Nevertheless, such discussions provide food for critical thought.

The endowments perspective does not reveal why high levels of land inequality evolved throughout the entire Latin American region. The geographic conditions of Argentina and Uruguay have much more in common with large parts of North America, than they have with countries in the tropical zones of South America and the Caribbean. Moreover, in the former countries the practice of slavery or coerced native labour remained marginal. In this

respect the institutional perspective offers a better explanation for the evolution of land inequality in Latin America. The institutional perspective, however, falls short when it comes to the question why in some parts of the British colonial empire land was being distributed on a fairly egalitarian basis, while in other parts, such as the Southern states of the US and the Caribbean sugar islands as Jamaica and Barbados, land was concentrated in the hands of an export-oriented, slave-owning rural elite. Indeed, the connection between geography, scale economies and the evolution of slave plantations does not seem to be decisively influenced by institutional differences of the colonial motherlands.

Some of these problems can be resolved by distinguishing various types of land inequality (Bauer 1986). The most obvious distinction is between the plantation economy in tropical Latin America and the Southern states of British America and the haciendas on the Spanish American mainland. No doubt, the cultivation of sugar and tobacco is bound to climatologic and location conditions (access to the Atlantic Ocean). The plantation economy was inextricably connected to the institution of slavery and the benefits of scale-intensive production in cash crop agriculture (Fogel 1989, Stinchcombe 1995).

However, large parts of Latin America were simply too remote to become engaged in the export of tropical cash crops, even if natural conditions would allow for it. The development of the hacienda economy was not restricted by very specific geographic conditions. Haciendas were, to a large extent, engaged in the cultivation of food crops and live stock products for the domestic market, a type of production without evident scale economies. Nevertheless, the hacienda became a symbol for regimes of pervasive inequality as well. They operated on a mix of free wage labour and various forms of coerced labour. Although slaves were working on haciendas in the coastal areas, the majority of the work force in the hinterland consisted of native Indians and Creoles (Duncan and Routledge 1977, Brading 1984). Therefore, the Caribbean sugar plantation seems to fit much better into the endowments perspective, whereas the typical hacienda seems to reflect more of the political inequality legitimized by specific Spanish colonial institutions. The colonial comparative perspective applied in the remainder of this paper will show, however, that the evolution of land inequality in a colonial context follows even more diversified paths than those outlined above.

3.3 Global and regional variation in levels of land inequality

Land distribution data are scarce. Taylor and Hudson (1972: pp. 267-9) present a dataset consisting of gini-coefficients of land distribution of 54 different countries in some year close to 1960. More recently Deininger and Squire (1998) used a dataset of 261 gini-coefficients of

103 different countries, of which so far 60 observations around the year 1960 have been published in a paper by Deininger and Olinto (1999: p. 24). The land distribution data used in this study are derived from several reports of the IIA[30], the FAO World Census of Agriculture and a few country-specific censuses. The world census of agriculture has been conducted every decade since the 1930's, with the exception of the 1940's.

The full dataset is presented in table A.3.1 of the appendix. The dataset consists of 186 observations for 105 different countries, including a considerable amount of pre-war estimates ranging from 1880 to 1999. In accordance with former studies the land distribution figures are expressed in Gini-coefficients. These are compiled on the basis of the decile distribution of the total number of land holdings[31] (farms), and the total amount of agricultural land (nation-wide), excluding communal pastures and forests.[32] The Gini-coefficient (G) is defined as,

$$G = \frac{\sum_{i=1}^{n}\sum_{j=1}^{n}\left|x_i - x_j\right|}{2n^2\mu}$$

Where x_i and x_j are the percentage shares of land of n deciles (n = 10) and μ is 1/n.

A discussion of the adopted time-frame will be presented in the next section when selecting the sample for the regression analysis. This section proceeds with a discussion of the data characteristics, which is necessary to interpret the meaning of the land Gini's in a correct manner (see also Frankema 2007a).

1) First, the data refer to the size distribution of land holdings. A holding is defined as all agricultural land assigned to a "holder", that is one or two persons, but no group, community or state. Furthermore, a holding is being referred to as a distinct "management unit", i.e. a farm. Land holdings refer to the amount of agricultural land at the disposal of the holder, rather than the amount of land owned by the holder. This is both an advantage and a disadvantage. Given the complexity of definitions of land ownership, the concept of land

[30] IIA refers to the Institut International d'Agriculture, the precursor of the FAO during the Interwar years. The office of the IIA was vested in Rome.

[31] "Land holding" refers to the disposable amount of land per farm, which is not the same as the land owned by the farmer. Land property is generally more unequally distributed than land holdings, depending on the share of land under tenure. The distribution of land holdings therefore serves as a lower benchmark of the ownership distribution. The distribution of land holdings is a clear analytical concept as it captures the "access" to land as a production factor. A limitation of both concepts is that differences in land quality are not taken into account and there is little that can be done to correct this.

[32] The land inequality estimates were also computed in Theil-coefficients. The use of land Theil's in the regression analysis (presented in the next section) did not alter the results significantly. To be concise the remainder of this study is based on land Gini's.

holdings is easier to interpret and therefore better fits comparative purposes. The distribution of land holdings reflects the distribution of a key asset used to generate income. The great disadvantage of this concept is that no distinction can be made between tenants and owners. These land Gini's therefore do not reflect the distribution of wealth. Depending on the share of tenancy, the land Gini's represent a lower level benchmark of the ownership distribution.

2) Land is only expressed in size (acres or hectares) and there are no corrections made for the quality, the location or the type of land. The total agricultural area includes all land that is part of a holding, i.e. arable land, land under permanent crops, land under permanent meadows and pastures, wood and forest land and a category of all other land. In the case of shifting cultivation the total area of the holding consists of the total area under crops and the area that is prepared for cultivation (FAO 1971: p. 31). The size distribution of holdings must be taken as a very rough proxy of asset distribution, yet it is the best we have for broad cross country comparisons

3) The original census data were subjected to several selection criteria regarding the coverage of the land survey. The survey had to cover the total (national) acreage of agricultural land. For the subsistence sector the estimated distribution on the basis of a sample selection was accepted, large estates had to be enumerated completely. In some countries only cropland was surveyed, which was accepted only in case meadows and pastures occupied a negligible share in total agricultural land area (less than 5%) or are part of communal holdings. Circa 60 surveys with an incomplete coverage of agricultural land or an incomplete coverage of land holdings were excluded.[33] Around one-third of these were excluded because surveys did not make a distinction between communal land holdings and single private land holdings. Indeed, the estimated land Gini's of socialist Eastern European countries in the 1970's and 1980's display extreme land inequality since private small-holders and communal holdings are both counted as individual farm holdings.[34]

[33] a) Some surveys only include cropland and exclude pastureland. Usually this sample bias applies to countries with a minimal share of pastureland or, countries in which pastures are part of communal estates and therefore not subject to a personal distribution measure. FAO statistics also provide statistics on crop and livestock production, which enables an evaluation of the validity of the surveys that are exclusively based on cropland. In Chad and Botswana the exclusion of pastures in the sample lead to a misrepresentation of livestock production and these countries are therefore excluded from the data set. Also Madagascar and Malawi are excluded because of incomplete coverage. b) In some cases farms are differentiated into traditional indigenous household holdings and European holdings, reflecting the traditional colonial categorisation of land holdings. Surveys taking only one category into account will underestimate actual land inequality For this reason Zimbabwe and Tanzania a.o. are excluded. For Zambia (1960) one observation is rejected, yet an alternative observation is accepted.

[34] In the Deininger and Olinto paper former socialist Eastern European countries are excluded, but in the study by Deininger and Squire (1998) the East European land Gini's are used in an inequality-growth analysis which undoubtedly impacts on the results.

Table 3.1 presents descriptive statistics of land Gini's of 110 countries divided into 13 world regions (Frankema 2007a). The countries consist of the 104 countries in the dataset presented in the appendix and 6 observations from the other two datasets.[35] The figures clearly show that the variation in land inequality levels is considerable across and within the selected regions. The land Gini's vary from a minimum of 29.1 (Singapore) to a maximum of 86.3 (Paraguay). The average land Gini of this sample is 59.7 with a standard deviation of 15.0 and a coefficient of variation of 0.25. The median is 60.0. What about the global and regional variation?

Table 3.1 shows that the distribution of land in Latin America is more skewed than in any other region of the world. The top twenty of the sample lists no less than 16 LAC's. It is further worth noting that Latin America is also the only world region in which the variation in land inequality is limited: the coefficient of variation in South and Central America is just 0.08, far below the other regions.[36] These figures highly suggest that there is something specific about land inequality in Latin America.

Table 3.1: Descriptive Statistics of land Gini's divided into 13 world regions

	min	max	median	mean	st. dev	cv	obs
South America	63.9	86.3	80.4	79.9	6.3	0.08	11
Central America	60.7	78.3	73.9	72.3	6.0	0.08	7
Carribean	46.2	81.6	69.9	68.1	11.8	0.17	7
East Asia	30.7	43.8	39.5	38.4	5.5	0.14	4
South Asia	41.8	62.3	55.4	53.7	8.7	0.16	6
South East Asia	29.1	68.0	47.3	47.9	11.7	0.24	8
North Africa and Middle East	56.3	82.0	63.8	65.1	7.3	0.11	12
South and East Sub Saharan Africa	36.8	83.5	66.7	62.7	17.4	0.28	12
West and Central Sub Saharan Africa	31.2	68.1	45.2	45.3	9.0	0.20	14
Western Offshoots	47.0	78.6	61.1	61.9	16.4	0.26	4
Western Europe	47.0	79.1	63.4	63.9	10.1	0.16	14
Eastern Europe	39.2	60.0	52.4	51.0	9.5	0.19	8
Scandinavia	42.1	63.3	47.2	49.3	7.5	0.15	4
World	**29.1**	**86.3**	**60.0**	**59.7**	**15.0**	**0.25**	**111**

Source: See table A.3.1 in the appendix and the notes below table 3.3.

[35] From Deininger and Olinto (2001) I included figures for Bolivia, Madagascar, Mexico and Tanzania and from Taylor and Hudson (1972) I included figures for Luxembourg and Libya.

[36] It should be noted that the larger variation in the Caribbean is basically due to the low level of land inequality in Haiti (46.3). In Haiti the slave revolt in the late 18th century stripped European land owners from their possessions and resulted in a massive redistribution of land from large estates to African smallholders. Without Haiti, the regional average of the Caribbean would rise to 71.8, and the coefficient of variation would decline to 0.10.

Table 3.2 shows the concentration of land holdings within the top one percentile of land holders. The table indicates that the extremely high levels of land inequality in Latin America are closely related to the presence of a very small minority of land holders who control more than a quarter to four-fifth of the total available agricultural land. These figures reveal that the distribution of land is bi-polar, which means that it consists of a limited number of latifundias (with holdings easily exceeding thousand hectares, outnumbered by a large group of small and medium-holders, including a significant share of subsistence farms. This bi-polar structure suggests that rural communities as well as the organization of the rural production processes is essentially dualistic in Latin America, in terms of land-intensity, labour requirements, investment capacity and potential technological applications.

From a comparative perspective it is noteworthy that Spain and Portugal are the two European countries with the most unequal distribution of land. The levels of land inequality in the former Iberian colonial motherlands appear to be as high as in the average Latin American country. Within Europe and among the four New World countries large differences in land inequality occur. Catholic countries in Europe seem to have relatively high land Gini's, whereas Scandinavian countries are among the most confined. The USA and Canada display considerably lower levels of land inequality than Australia and New Zealand.

In Asia the variation in land inequality is high as well. The highest land Gini is observed in rubber producing Malaysia (68.0), an interesting case study country indeed. Sri Lanka, the other main rubber producer, has the second highest land Gini in the region (62.3). The four East Asian countries in the sample are among the world's most egalitarian. Ranking all land Gini's from low to high, South Korea ranks 2nd, Taiwan 9th, Japan 12th and China 20th. Except for China, these East Asian countries are well known for having realised "growth with equity" and it is often argued that land reforms have paved the way for a relatively equitable distribution of assets and income. The steep drop in the Taiwanese land Gini (from 53.9 in 1920 to 39.0 in 1960, see Appendix table A.1) illustrates the large impact of the land reforms in the early 1950's (Fei, Ranis and Kuo 1979).

In Africa the intra-regional differences are remarkably large. East and South African countries such as Kenya, Tanzania, Zambia (one of the case-study countries), Zimbabwe, Namibia and South Africa are notorious for high levels of land inequality. In many West and Central African countries, however, land inequality appears to be rather limited. Countries such as Uganda, Ghana, Sierra Leone (one of the case-study countries), Togo and Burkino Faso obtain land Gini's considerably below the world average of 60.0. The West and Central African regional average is among the most egalitarian in the world.

This brief global overview of land inequality levels confronts us with dozens of questions. How can the large contrast between the West and the East of Sub Saharan Africa be explained? Why is the land Gini in Malaysia so much higher than in South Korea? Can we

draw any parallels between Latin America and other regions, and what lies behind the striking low intra-regional variation in the former region? Are countries in the tropics characterized by higher levels of land inequality on average, than countries in temperate climate zones? In other words, what explains the large variation observed in the distribution of land holdings?

Table 3.2: The concentration of land in the top one percentile of the land holding distribution

	year	land gini	share of holdings (>1%)	share of land area (<20%)
Paraguay	1961	86.3	1.0%	84.1%
Barbados	1961	81.6	0.6%	81.2%
Peru	1961	85.4	0.8%	80.7%
Kenya	1960	76.2	0.5%	63.7%
Mauritius	1930	74.2	0.7%	61.9%
Swaziland	1971	83.5	1.0%	59.8%
Ecuador	1954	80.4	0.9%	56.7%
Chile	1927	83.7	0.7%	56.0%
Venezuela	1961	85.7	1.0%	55.2%
Iraq	1958	82.0	1.0%	55.1%
Jamaica	1961	75.7	0.6%	54.4%
Malaysia	1960	68.0	0.5%	53.4%
Zambia	1971	69.9	0.6%	51.8%
Israel	1970	69.8	0.9%	51.4%
Spain	1960	79.1	1.0%	49.0%
Dominican Republic	1960	74.5	1.0%	48.4%
El Salvador	1961	78.3	0.9%	46.3%
Portugal	1968	75.6	0.6%	45.2%
Guatemala	1964	77.0	0.5%	45.1%
Brazil	1960	78.7	1.0%	44.1%
Colombia	1960	80.5	0.6%	40.4%
Austria	1930	68.4	1.0%	40.0%
New Zealand	1910	78.6	0.7%	39.9%
Trinidad and Tobago	1963	69.1	0.6%	38.9%
Guadeloupe	1969	60.0	0.6%	38.7%
Honduras	1952	70.6	0.8%	38.0%
Costa Rica	1963	73.9	0.9%	35.6%
Nicaragua	1963	75.9	0.9%	35.6%
Saudi Arabia	1972	74.2	0.9%	35.4%
Congo, dem. rep (Zaire)	1970	53.2	0.0%	35.2%
Italy	1930	71.5	0.5%	34.8%
Argentina	1914	80.3	0.7%	33.4%
Sri Lanka	1961	62.3	0.5%	33.0%
Panama	1960	69.9	0.9%	31.1%
Liberia	1971	68.1	0.5%	29.0%
Australia	1910	73.4	0.6%	28.6%
Uruguay	1960	79.1	1.0%	28.5%

Source: Calculations based on the data presented in appendix table A.3.1, see also Frankema 2007a.

3.4 A multivariate regression analysis of land inequality

This section tries to tackle the discussion of the endowments and institutions hypotheses in an OLS regression framework. The regression analyses are based on two samples, one including all countries with at least one land distribution observation (sample a), and one including only former colonies with at least one land distribution observation (sample b). The analysis centres on the colonial sample. The crucial assumption is that the land Gini's included in the colonial sample reflects most of the variety that prevailed under colonial rule. For Asian and African countries with an observation in the early post-war years the timing seems appropriate, just at the end of the colonial period. For the LAC's and the USA the time lag between independence and the first available observation is considerable. For the USA the first observation is of 1880 and for most Latin American countries around 1910 to 1960. Time series available for LAC's such as Argentina and Chile show that land inequality levels throughout the 20th century are persistently high, but the assumption that they reflect their colonial levels is a weak spot in this analysis. It is good to bear these shortcomings in mind when interpreting the regression results.

The hypotheses are specified in the following model:

$$y = \alpha + \beta 1\, x1' + \beta 2\, x2' + \varepsilon$$

where y refers to the level of land inequality in the earliest post-colonial year of observation, α is a constant and ε is an error term. The vectors x1 and x2 capture several variables related to the impact of the endowment structure and colonial institutions on land inequality respectively. The variables consist of:

1) A climate variable, taken to be the mean annual temperature, expected a positive sign.

2) A dummy variable controlling for countries engaged in extensive ranching activities, expected a positive sign.

3) Crop variables capturing the relative suitability of the agricultural land to cultivate tropical cash crops and basic food crops. The first is expected a positive, the latter a negative sign.

4) A variable of relative population density measured as the ratio of population over agricultural land, expected a negative sign.

5) The institutional variables consist of dummies for colonial mother countries, reflecting the impact of different colonial policies initiated by different colonial powers. The

British colony dummy is expected to have a negative sign, while the Iberian colony dummy is expected to have a positive sign.

6) A variable capturing the presence of the catholic church, measured as the share of the population that is denoted to be of catholic faith, which is expected a positive sign.

More details concerning the variables are given in appendix table A.3.2. A corresponding correlation matrix (pair wise samples) is given in appendix table A.3.3. The correlation matrix shows that all signs of simple correlation-coefficients are as expected, except for the mean temperature variable, which is negative. The cash crop variable, the Iberian colony dummy and the Catholicism variable obtain the highest correlation-coefficients with the land Gini, respectively 0.26, 0.50 and 0.45. The matrix shows that there are no evident problems of multicollinearity in the sample, but in the more confined colonial sample there is a problem with including the Iberian colony dummy and the Catholicism variable, as their correlation exceeds 0.70. Therefore the latter is excluded from the regressions of sample b.

Before jumping to the regression results a few more words of caution need to be added. A multivariate regression analysis that employs such crude proxy variables in a completely a-historical framework can only serve the purpose of identifying potential channels of causation. The results provide an indication of the relative consistency of the signs and the coefficients controlled for other variables, but I do not claim that the results reveal evidence for causal relations, which can be interpreted straightforwardly. Table 3.3 reports the regression results.

The regression results seem to raise support for the hypothesis that land inequality is a function of conditions supporting either food or cash crop cultivation. The food crop variable is consistently negatively related to land inequality and mostly significant at the 10% level, the cash crop variable has a consistent positive sign. Yet, the coefficients vary considerably between different specifications of the model. The measure of climate (mean annual temperature) does not reveal anything at all.

The results for the population density variable are quite remarkable. In the smaller colonial samples population density is significantly negatively related to land inequality. This effect does not turn up in the global sample. The outcome suggests that the institutional response to low population density levels differs in a colonial context as compared to a non-colonial context. Put differently, in colonies with low levels of population density the probability that land will become unequally distributed is higher than in non-colonies (mainly European countries). In this respect it is also noteworthy that the adjusted R-squared for the smaller colonial samples is higher than for the larger global sample.

Table 3.3: OLS Regressions of land inequality (Gini-coefficients) of a global sample (a) and a colonial sample (b)

	1a	1b	2a	2b	3a	3b	4a	4b
Mean temperature	-0.002	-0.003			0.000	-0.001	0.000	-0.001
	-1.02	*-0.75*			*0.04*	*-0.31*	*0.07*	*-0.32*
Ranching (D)	0.067	0.016			0.042	-0.019	0.047	-0.020
	1.16	*0.26*			*0.80*	*-0.33*	*0.86*	*-0.34*
Food crops	**-0.076**	-0.072			**-0.120**	**-0.106**	**-0.130**	**-0.110**
	3.12	*-1.64*			*-3.52*	*-2.72*	*-2.97*	*-2.11*
Cash crops	**0.098**	0.108			0.010	0.026	0.007	0.030
	-1.95	*3.25*			*0.30*	*0.75*	*0.18*	*0.72*
Population density	**-0.021**	**-0.032**			0.002	**-0.019**	0.001	**-0.019**
	-2.05	*-2.76*			*0.18*	*-1.71*	*0.89*	*-1.68*
British colony (D)			0.019	0.042	0.036	**0.068**	0.014	0.064
			0.66	*1.20*	*1.03*	*1.72*	*0.22*	*0.90*
Iberian colony (D)			**0.138**	**0.209**	**0.135**	**0.210**	**0.122**	**0.220**
			3.76	*5.61*	*2.74*	*4.43*	*1.69*	*2.92*
Catholicism			**0.021**		**0.030**		**0.031**	
			2.57		*3.13*		*3.12*	
Food crops*British colony (D)							0.030	0.007
							0.42	*0.09*
Cash crops*Iberian colony (D)							0.014	-0.011
							0.23	*-0.17*
C	0.863	0.978	0.514	0.532	0.548	0.795	0.556	0.798
R-Squared	0.25	0.32	0.30	0.31	0.48	0.50	0.48	0.50
No. of observations	84	62	105	79	84	62	84	62

Notes: All regressions are OLS, t-statistics in italics below coefficients, significance-levels are reported in bold if the p-value is lower than 0.1. *Countries included in the colonial sample*: **South America**: Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Uruguay, Venezuela; **Central America**: Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama; **Caribbean**: Barbados, Dominican Rep., Guadeloupe, Jamaica, Puerto Rico, Trinidad and Tobago, Haiti; **East Asia**: Korea. Rep, Taiwan; **South Asia**: Bangladesh, India, Nepal, Pakistan, Sri Lanka; **South East Asia**: Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Vietnam; **North Africa & Middle East**: Algeria, Cyprus, Egypt, Israel, Iraq, Jordan, Kuwait, Libya, Morocco, Syria, Tunisia; **East & South Sub Saharan Africa**: Botswana, Ethiopia, Madagascar, Mauritius, Mozambique, Kenya, Lesotho, Reunion, South Africa, Swaziland, Tanzania, Zambia; **West & Central Sub Saharan Africa**: Burkina Faso, Cameroon, Central African Rep., Cote d'Ivoire, Ghana, Guinea, Mali, Niger, Senegal, Sierra Leone, Togo, Uganda; **Western Offshoots**: Australia, Canada, New Zealand, USA **Europe**: Malta; *Additional countries included in the global sample*: **East Asia**: China, Japan; **South Asia**: Iran; **South East Asia**: Thailand; **North Africa & Middle East**: Turkey; **West & Central Sub Saharan Africa**: Liberia; **Western Europe**: Austria, Belgium, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Switzerland, UK; **Scandinavia**: Denmark, Finland, Norway, Sweden; **Eastern Europe**: Czechoslovakia, Estonia, Latvia, Lithuania, Poland, Romania, Slovenia, Yugoslavia.

Considering the institutional variables three issues deserve special attention. First, the Iberian colony dummy is positive, significant and also shows the most robust coefficient in various specifications: former Iberian colonies obtained a land Gini which is 0.21 to 0.22 points higher on average. There seems little doubt that Latin American levels of land inequality are extraordinary. Second, despite the high mutual correlation between the Iberian colony dummy and the Catholicism variable, the latter also remains positive and significant in the global

sample, indicating that not just Iberian colonial institutions, but Catholic institutions have had a decisive impact on the distribution of land.

Third, and probably most surprising, is the shady performance of the British colony variable. Table 3.3 has shown that the direct relationship between land inequality and British colonial institutions is very weak. Besides, contrary to our expectations, the regression coefficient displays a positive sign, even in the colonial samples. British colonies, on average, do not seem to have lower levels of land inequality than other European colonies. The interaction terms (between the colonial dummies and the endowments variables) underline this counterintuitive result. We would expect that the interaction of the British colony dummy and the food crop variable would reveal a negative sign, yet it does not. These findings, in combination with a closer look at the regional and country-specific values of the land gini, confront us with a new question regarding the colonial roots of land inequality. Indeed, there is a clear positive connection between Iberian colonial institutions and land inequality. Yet, in former British colonies levels of land inequality varied enormously. This variation also appears to be largely independent of the geographic location of the colony in question. In other words, if endowments and metropolitan institutions together fail to explain why land inequality evolves in a colonial context, there must be other determinants which need to be further examined.

The overall picture thus typifies a "land unequal country" as a land abundant former Iberian colony, suitable to cash crop cultivation and such a description comes remarkably close to some Latin American countries, but not all. As noted above, the local geographic conditions and endowment characteristics differed largely across Latin America. The institutional explanation of Latin American land inequality seems to suit the small intra-regional variation in land inequality levels much better. But this conclusion can not be based on a dummy variable that does not reveal anything about the nature of colonial institutions. Indeed, we are missing historical content. Why did the distribution of land in tropical British West Africa, with apparently good conditions for plantation economies, remain limited? Why did land inequality develop in many regions of the remote Latin American hinterland that had no potential for scale intensive commercial agriculture at all?

3.5 Land market institutions in three British colonies: Malaysia, Sierra Leone and Zambia

This section adopts a comparative case-study approach to investigate the evolution of land distribution policies in three former British colonies in the last quarter of the nineteenth and the first half of the twentieth century: British Malaya (the peninsula, Malaysia hereafter), Sierra Leone (the colony and the protectorate) and Northern Rhodesia (Zambia hereafter).

This selection is motivated by a combination of similarities and differences in the initial conditions and colonial policies in these countries, which will be discussed below and are summarized in appendix table A.3.4.

All three areas became subject to British colonial rule in virtually the same time-span (from the last quarter of the nineteenth century to the late 1950s or early 1960s) and were embedded in the British colonial empire with the formal status of British "protectorate"[37]. British colonial policies were based on several key principles which applied to all its protectorates. The general objective was to open up foreign markets for British products, to provide British entrepreneurs with access to cheap sources of labour, land and capital, and to secure the import of raw materials demanded by British industries. All protectorates had to be governed by a system of "indirect rule", implying that the colonial administration would seek to modernize the existing administrative networks, not by replacing or ignoring them, but by strengthening them.

The British supervised and controlled this process. The delegation of authority had to keep down governance costs and retain the balance between the interests of foreign enterprises, colonial settlers and the native population. The colonial administration had to refrain, as far as possible, from direct exploitation of economic resources. It had to concentrate on the facilitation of production and trade via infrastructural investments and securing property rights protection. Protectorates had to be administered with balanced budgets and should not pose a financial burden to British tax payers. Revenues could be raised by collecting a head or hut tax, by promoting colonial exports (tariff revenues) or by introducing legal title to land in order to sell it, rent it or impose land taxes.

The second common characteristic is the tropical location and the feasibility to cultivate tropical crops such as sugar, rubber and oil-palms in Malaysia and Sierra Leone and tobacco and cotton in Zambia. All these crops could be produced with the use of, at that time, readily available technologies. The British were familiar with the opportunities of commercial agriculture through their vast experience and research in its imperial domain.

The third common characteristic relates to the prevalence of traditional techniques and forms of organisation in agriculture before the arrival of the British. Systems of shifting cultivation were dominant and food crops constituted the bulk of rural production. The degree of commercialisation of the agricultural sector was limited and the distribution of land was highly egalitarian. Formal property rights and legal title to land did not exist. The rural

[37] The Wikipedia Encyclopedia defines a protectorate as: "a political entity (a sovereign state or less developed native polity, such as a tribal chieftainship or a feudal princely state) that formally agrees (voluntarily or under pressure) by treaty to enter into an unequal relationship with another, stronger state, called the protector, which engages to protect it (diplomatically or, if needed, militarily) against third parties, in exchange for which the protectorate accepts specified obligations, which may vary greatly, depending on the real nature of their relationship." http://en.wikipedia.org/wiki/Protectorate (18/11/2006)

population was organised in relatively small communities along tribal or kinship lines and levels of urbanisation were low.

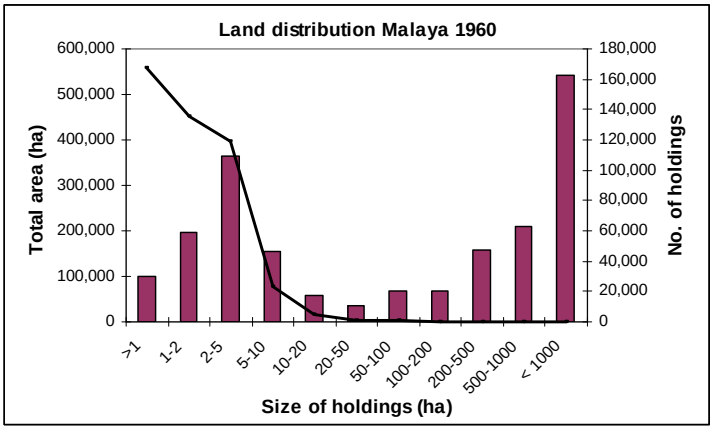
Crucial differences in terms of endowments existed between Malaysia and Sierra Leone on the one hand and Zambia on the other. Coastal access from the hinterland was much more costly in the land-locked protectorate of Zambia, than in both Malaysia and Sierra Leone, which disposed of good natural harbours at a short distance. Moreover, although levels of population density were generally low, the scarcity of labour in Zambia was considerably higher than in Malaysia or Sierra Leone.

On the basis of this information we would expect the development of a plantation economy in Sierra Leone and Malaysia, rather than in Zambia. Yet, only in Malaysia this was the case. The rubber economy which developed under British rule went along with a considerable increase in land inequality. Although the natural conditions in Sierra Leone were as favourable as in Malaysia, British attempts to develop a plantation sector were frustrated in a very early stage. In this respect, Sierra Leone is an example of a larger group of West African countries where the plantation sector remained either underdeveloped, or became organised on relatively small scale farms under control of the indigenous population. Consequently, levels of land inequality remained comparatively low (see also table 3.1 and appendix table A.3.1). In Zambia the development of a plantation economy never got really underway. Nevertheless, contrary to Sierra Leone, land was being redistributed from natives to colonial settlers on a large scale. Land distribution programs in Zambia were implemented for other reasons however, which had little to do with the development of a profitable agricultural export sector.

Despite the overarching British colonial policy principles, the institutions designed to alienate, sell and redistribute indigenous land resources varied considerably across these British colonies. A comparison of these three cases indicates that, only with the inclusion of the pre-colonial political and institutional context, it is possible to understand the great gap in land gini's of Malaysia and Sierra Leone around independence (68.0 vs 43.6), whereas the land gini's of Malaysia and Zambia were almost identical (68.0 vs 69.9), but related to an entirely different organisation of land and labour markets.

Colonial intrusion in Malaysia[38] had direct consequences for the distribution of land. Three years after independence the Gini-coefficient of land inequality noted 0.68, which is higher than any other Asian country in our sample (see appendix table A.3.1). Figure 3.1 shows that land is distributed between a large number of smallholdings (usually less than 10 hectares) and a small number of large estate holdings with an average size exceeding 500 or even 1000 hectares, the latter comprising ca. 39% of the total agricultural land area in 1960 (FAO 1971). Although comparable figures for the pre-colonial era in the 19th century are unavailable, historical literature makes it abundantly clear that land distribution in the traditional rural rice-economy, in absence of large estates and with average plot sizes limited to a few acres, used to be highly egalitarian (Ryan 1976, Nonini 1992, Drabble 2000).

Figure 3.1: The distribution of land area (bars, y-axis 1) and number of holdings (line, y-axis 2) per category of holding size (in hectares), Malaya Peninsula, 1960



Source: FAO, *Report of the World Census of Agriculture 1960*, Rome 1971, pp. 27, 43 and 56

Pre-colonial Malaya consisted of a patchwork of chiefdoms. Colonial trade during the 19th century was largely confined to the Strait Settlements of Singapore, Penang and Malacca in the coastal regions.[39] The Chinese had developed stakes in alluvial tin mining organized

[38] The territory referred to in the text is mainly confined to the so-called Federated Malay States (FMS), including the territories of Selangor, Perak, Negeri Sembilan and Pahang. Together these four states comprise the larger part of the Malayan Peninsula. This federation was established by the British in 1895 with the and changed into the Malay union with the inclusion of the Straits Settlements and the other "unfederated" Malay states in 1946. In 1948 this union became the Federation of Malaya to be changed into Malaysia in 1963 with the inclusion of Sabah, Sarawak and Singapore. Singapore withdraw from Malaysia in 1965.

[39] These were effectively British possessions. The Chinese however had considerable stakes in alluvial tin mining organized around kongsis of Chinese entrepreneurs, merchants and immigrant labourers (Drabble 2000: pp. 96-97).

around kongsis of Chinese entrepreneurs, merchants and immigrant labourers in the 19th century. The bulk of agricultural production however, was carried out within kinship-ordered village communities (kampong) where, given the low density of population, a system of shifting rice cultivation prevailed. In return for military protection the local elite (raja) obtained the right to collect labour tribute and a production tax from the commons (ra'ayat). The Raja held no legal titles to land and in case of conflicts over land or tribute the land frontier brought solution (Drabble 2000).

British colonial rule was formally established with the Treaty of Pangkor in 1874. In a classic piece of British gunboat diplomacy Raja Abdullah received military backing in his struggle against Raja Ismael to succeed Sultan Ali. In return for British support the Sultan would seek binding advice of the British Resident in all state affairs, including the collection and control of taxes, yet excluding cultural and religious matters. Tax collection had to be carried out in name of the Sultan but arranged according to the Resident's advice. This so-called residential system was replicated in the lower strata of the administration where local chiefs received "advice" in state affairs from British district officers (Ryan 1976: 158-162).

The most far-fetching measure to enhance government revenue was the introduction of legal title to land. The 1897 land enactment determined that all Malay holdings below 100 acres had to be registered in the Mukim Register. A set of land regulations (1879-1889) entitled holders to lease the land for a term of 999 years against an annual quit rent. Moreover, all unoccupied land (the greater part of the peninsula) was considered to be waste land owned by the government, which could be sold to foreign investors. Access to land thus became controlled and large tracts of alienated land opened the door to the large-scale cultivation of commercial crops and expansion of the mining activities in the tin fields (Nonini 1992).

British and Chinese planters started experimenting with sugar and coffee, but switched en masse to rubber in the 1890's. In less than two decades rubber became the ultimate Malayan cash-crop, a status to be retained during the entire colonial era. The rubber booms of 1905, 1910, 1912 attracted large numbers of European planter-settlers and the necessary inflows of capital and Chinese and Indian immigrant labour. At the eve of the First World War British Malaya supplied more than half of the world's rubber market. Land under rubber increased from 12% in 1910, to 46% in 1921, 63% in 1930, 71% in 1940 and 79% in 1960 of the total agricultural area in 1960 (Drabble 2000: p. 53 and 165, FAO 1971).

The indigenous Malay peasantry also started to grow rubber on their smallholdings. Smallholders were able to compete with large estates due to the low overhead costs involved in family farming. Intensive farming methods enabled them to generate higher yields per acre than the estates. Most of the smallholder rubber production was sold to local land agents or large plantation owners with better access to road and rail and better knowledge of the export

market. Figure 3.2 shows the total area planted with rubber from 1910 to 1960. Estates and smallholdings are separated respectively into the categories over, and under, 40 hectares of land. According to this definition the share of smallholdings in total rubber acreage rose from 23% in 1910 to 41% in 1921 and gradually declined since.

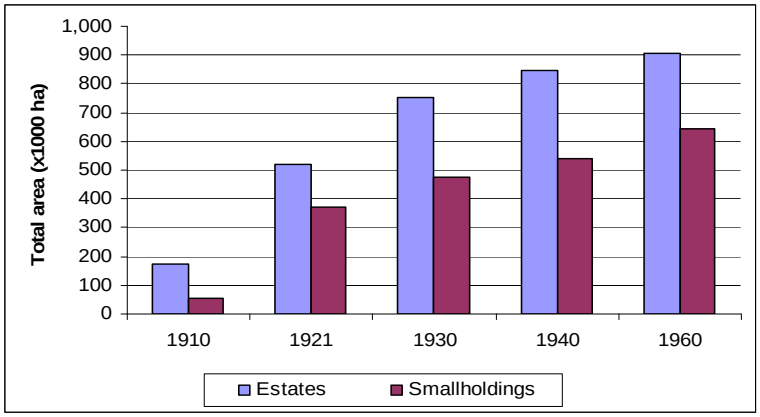
The chronic shortage of labour posed serious constraints to the expansion of the estate sector. The Malay peasantry refused to offer their labour in return for money wages and Indian and Chinese labour immigrants were attracted in large numbers to carry out the harsh work on the estates: in 1931 ca. 1.28 million Chinese and 0.6 million Indians made up 34% and 16% of the total population respectively (Drabble 2000: p. 143). As a result of the large population increase and the shift towards rubber of indigenous farmers rice became a major import product.

During the interwar period two major slumps in the rubber market (1920-1922 and 1930-1936) caused controversy on the question whether to restrict output and exports in order to keep up rubber prices, or, to maintain production levels and accept lower rubber prices. The first option was opposed by the Malay smallholders and preferred by European planters (Drabble 2000: pp. 127-32). The onset of the Great Depression further raised the pressure to restrict output. In 1930 the development of new rubber acreage was prohibited and in 1934 the International Rubber Regulation scheme (IRRA) was established to provide for an international quota system (Drabble 2000: pp. 144). These new restrictions pressed hard on the Malay smallholders, which is reflected in the relative, though not in an absolute, set back of smallholdings in total rubber acreage since 1921 (see figure 3.2).[40]

Peasant resistance to discriminative colonial policies consisted of the illegal occupation of new or allocated land (squatting) and the underreporting of yields for taxation. These protests never got a violent character however. Nonini describes this as “avoidance protest”, a passive rather than aggressive form of protest against colonial rule (Nonini 1992: pp. 63-6). Nonini argues that obedience to local rulers was deeply instilled in the social norms and customs of the aborigine Malay, which explains the relatively smooth functioning of indirect rule in British Malaysia. Yet, the fact that Malay peasants and local rulers took part in the benefits of commercialisation, while foreign import labourers bore most of the brunt of the plantation work, has undoubtedly also contributed to the stability of colonial society.

[40] There are some indications suggesting that the formulas to calculate the quotas were biased against the smallholders, under-assessing the average yield per acre and thus assigning a lower quota (Nonini 1992: p. 89). Nonini interprets the rubber regulations as an well intended attempt to diminish the competitive threat that smallholders posed to the European planters. Drabble basically underlines this view and adds that European planters had still the opportunity to intensify cultivation (more densely replanting of trees on existing rubber acreage), contrary to the smallholders who already made optimal use of their land resources (Drabble 2000: pp. 131-2).

Figure 3.2: The total area of rubber cultivation divided into smallholdings (< 40 ha) and estates (> 40 ha), Malaya, 1910-1960



Source: Drabble 2000: p. 53 and 165

Taking "sufficient" care to weigh the interests of the native peasantry against those of European and Chinese investors and planters, indirect rule proved an efficient and effective tool to exploit the great Malayan rubber and tin potential. British Malaya is an example of a colony with highly favourable conditions to tropical cash crop cultivation, which has induced high levels of land inequality. It should be noted that, at present, Malaysia still obtains one of the highest levels of income inequality in Asia, with a Gini around 0.50, second only after Papua New Guinea (UNDP, Human Development Report 2004). A substantial part of this high level of inequality is explained by ethnic inequality and the social exclusion of large parts of the immigrant population. As the share of agriculture in GDP has declined sharply in the last decades, the impact of land inequality on income inequality has also rapidly declined, but the roots of ethnic inequality in Malaysia were tightly intertwined with the evolution of the colonial plantation economy.

Sierra Leone 1896-1961

In the second half of the 18th century Sierra Leone transformed from an important centre of the transatlantic slave trade into the first African settlement of freed black slaves. In 1792, the Sierra Leone Company founded Freetown as a resort for black American slaves who had fought at the side of the British in the American independence war. In 1808 Freetown became the capital of the small coastal British Crown colony of Sierra Leone. In the course of the 19th century ca. 45,000 freed slaves found refuge in this colony. Only in 1896 the vast hinterland, which we now refer to as Sierra Leone, became a British protectorate. British intervention marked the end of a long period of endemic tribal warfare in the hinterland (Kilson 1966).

Geographical conditions and the political constellation in pre-colonial Sierra Leone reveal remarkable resemblances to pre-colonial Malaysia. The territory was inhabited by a substantial number of ethnic and linguistic heterogeneous tribes. Each tribe was subdivided into various chieftains headed by a paramount chief and sub-chiefs elected from a confined number of elite families. The major food crop was rice, which was produced, together with other traditional food crops such as millet, yam and cassava, in a system of shifting cultivation. The area had a large potential for the production of tropical cash crops, as the soil and climate are particularly suitable to growing coffee, cocoa, cotton, palm and rubber trees (the latter producing high-quality rubber!). As in Malaysia, Sierra Leone had good access to sea transportation via the natural harbour of Freetown (Kilson 1966, Cartwright 1970).

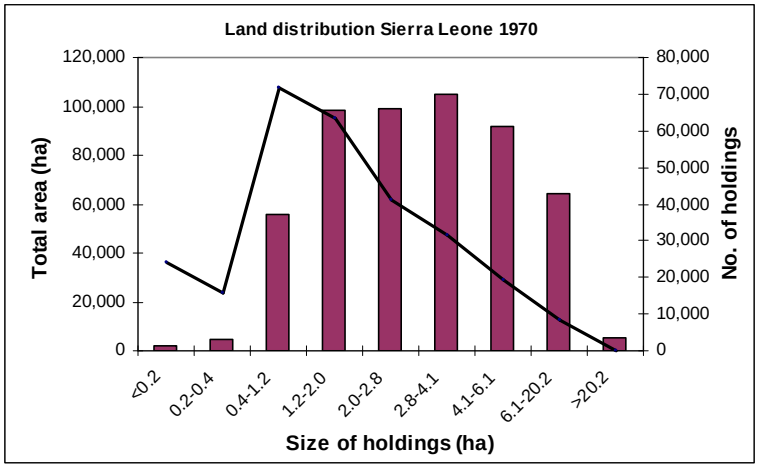
The British acknowledged the productive potential of the protectorate. Experiments with cash crop farming were carried out in the botanical garden in the hills near Freetown with the objective to diffuse agricultural knowledge and technology among the indigenous population. Several colonial reports and surveys mention the ample prospects for investments in the Sierra Leone hinterland (see Macmillan 1968: pp. 229-46 and Crooks 1972: pp. 348-58). T.J. Alldridge, the Travelling District Commissioner who negotiated the treaties with the local rulers, concluded in 1900 with respect to the prospects of agricultural commercialisation that "There is now ample scope for the safe introduction of capital in the Protectorate." (Kilson 1966: p. 15)

In spite of the similarities with Malaysia, a plantation economy did not develop in Sierra Leone and the engagement of the natives in commercial agriculture never compared to that of the Malayan peasantry. Figure 3.3 shows that the distribution of land in Sierra Leone in 1970, nine years after independence, is almost completely dominated by tiny plots of subsistence farmers (the far majority) and some smallholdings producing cash crops. Circa 60% of the land area was devoted to rice. The land Gini noted 0.44 (FAO 1978).

The colony of Sierra Leone had the reputation of being "the White man's grave". The high tropical disease incidence (especially malaria) gave the coastal area of Sierra Leone one of the highest settler mortality rates in the world. Acemoglu et al. (2001) argue that a high tropical disease incidence reduces the scope of colonial settlement. Is this the reason that the British did not develop a plantation economy in Sierra Leone? There are several arguments against this hypothesis. First, technological progress in the combat against malaria (mainly increased production and application of quinine) made it possible in Malaysia to implement large scale eradication programs (Norman Parmer 1989). These were never tried in Sierra Leone on a large scale. Moreover, the health conditions at the coast were as bad as in the hinterland, which raises the question why the British did settle in the colony, but not inland? Perhaps

most convincing is the fact that the local colonial administration did develop plans to alienate land in the protectorate, but never effectuated these plans.

Figure 3.3: The distribution of land area (bars, y-axis 1) and number of holdings (line, y-axis 2) per category of holding size (in hectares), Sierra Leone, 1970



Source: FAO, *Report on the 1970 world census of agriculture*, Census Bulletin no. 20, Rome 1978, pp. 9-20 Notes: The original survey reported land area in acres, which is translated into hectares in this figure.

The major reason seems to be that the indigenous tribes would not allow the British to occupy large tracts of land that they regarded as theirs. The extension of the colony would have invoked large operational costs, not only in terms of defence expenses, but also in terms of lives of British soldiers. As in other parts of British West Africa, local resistance to colonial occupation was too strong to be suppressed without the use of large-scale military force. In fact, only the development of superior military technology in the late 19th century enabled European armies to prevent native attacks on their coastal settlements (Stavrianos 1981: pp. 279-82, Curtin et al. 1990: pp. 419-43). Contrary to Belgian and Portuguese colonial policy, which did allow for large scale military campaigns, British colonial policies were founded on the principle that every colony should "pay its way". The British government actively opposed the development of estates in Sierra Leone for the simple reason that local resistance against land alienation would prove too costly to suppress (Crooks 1972).

The influential position of the local elite in tax collection illustrates the relatively weak position of the British colonial administration. When the hut tax of five shillings per dwelling was introduced to cover the expenses of the administration of the Protectorate, opposition of the Mende and Temne tribes[41] lead to the Hut Tax War of 1898-99. The

[41] According to the 1963 census the Mende, living in the Southern and Eastern provinces, comprised around one third of the total population. The second large tribe, the Temne, accounting for yet another

rebellion took the lives of approximately thousand Creoles serving as missionaries or traders and an indefinite number of European missionaries, before the local British army was able to restore order. The fact that Creoles formed the larger part of the British army enhanced the already present distrust between the indigenous people and the "European blacks" in the colony.[42]

Resurging waves of protest against taxation became more and more directed against local chiefs who abused their position as tax collectors to enrich themselves. The chiefs gradually extended their incomes by collecting all sorts of fees and levees, besides their official title to a share of the hut tax. The British were not able to take away the resentment of the people against these abuses, since they lacked the will to invest in military capacity to enforce their rules. In 1937 the colonial administration proposed, as part of a wider administrative reform, to improve the accountability of tax collection by prohibiting the personal reception of any tax, labour tribute or customary levy. In exchange for a share of the hut tax the chiefs would now receive an official government salary. A decade later 43 per cent of the chiefdoms still refused to carry out the tax reform (Cartwright 1970: pp. 30-2, Kilson 1966: pp. 28-32).

The resented hut tax raised the need for cash and pushed people away from the subsistence economy towards the money economy. Yet, the commercialisation of the agricultural sector was a marginal phenomenon compared to the surge in the mining industries in the 1930's and 1950's. In particular the Diamond rush in the early 1950's drove an enormous amount of subsistence farmers into wage labour, more than commercial agriculture had ever attracted (Cartwright 1970). Diamonds became the major export products and accounted for 63% of total exports at the eve independence in 1961. Iron ore accounted for another 19%, and palm kernels, palm oil, coffee and cocoa together consisted of 14% of total exports (UN, International Trade Statistics Yearbook 1962). Conflicts about the distribution of the abundant wealth of diamonds became the major source of the extremely violent and devastating civil war during the 1990's.

One of the key differences between Sierra Leone and Malaysia in the colonial era was the absence of land alienation in the former protectorate. After the Hut Tax War the British withdrew their plan to introduce the principle of land alienation and never even reconsidered that decision. Legal title to land did not become centrally registered and allocated by the

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third of the population, were living in the North Western parts of the country (Cartwright 1970: pp. 14).

[42] The gap in social and cultural background between Creoles and aborigines played a crucial role in the political conflicts over decolonization and post-independent governance during the 20th century. The Creole population had a very diverse ethnic background, and basically shared the fact they, or their ancestors had been African slaves. The common language was a type of African English spoken in the West Indies, most of them were Christians and had received a Western style education. The Creoles were officially British subjects and had little in common with the native Africans in the hinterland.

colonial administration. Much to the dislike of the Creoles, the natives enjoyed the same rights as British subjects under British law and were permitted to buy land in the colony, but non-natives were forbidden to own land in the Protectorate. In particular the Creoles who made their living in the Protectorate in small scale commerce or handicraft activities were exposed to the arbitrariness of native law and custom (Cartwright 1970: pp. 35-6).

The case of Sierra Leone offers a good illustration of other West African countries where colonial settlement remained constrained to the coastal areas. Especially the organisational and military strength of the indigenous tribes in the hinterland reveals the constraints of colonial land and labour market intervention set by pre-colonial institutions. The high operational costs of settlement made the colonial office in London reluctant to expand colonial activities in the Protectorate, in spite of the apparently favourable geographic conditions for commercial agriculture.

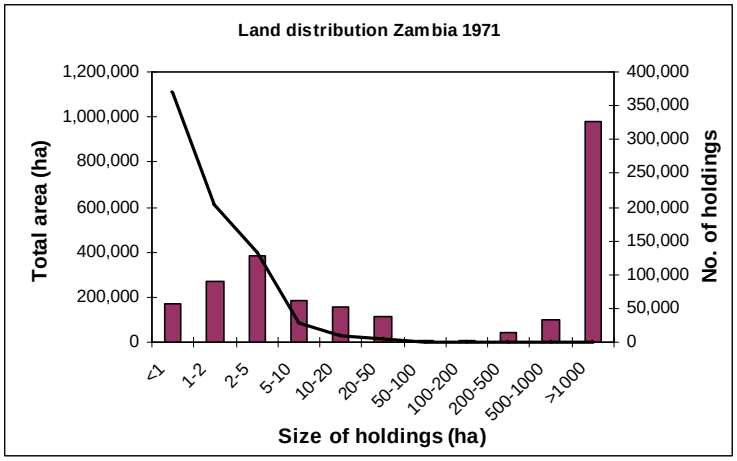
The appendix table A.3.4 offers a summary of the similarities and differences in 1) the geographic and endowment characteristics, 2) some basic features of the pre-colonial indigenous economy and society, 3) the design of British colonial rule and 4) various core aspects of land and labour market outcomes under colonial rule. This table indicates that the attitude and response of the indigenous population to colonial intervention forms a key difference in the comparative assessment of land market institutions. For the case of Zambia, to which we now turn, the table reveals that the geographic and endowment characteristics were considerably different compared to the two cases explored so far. The evolution of land inequality in Zambia followed a distinctively different pattern, induced by different economic and political objectives compared to Malaysia. The design of British colonial rule also deviated from common colonial policies.

Zambia 1889-1964

Although Zambia's geographical conditions do not effectively inhibit the cultivation of sugar, cotton or tobacco, its location as a land-locked country degraded much of the colonial prospects of profitable agricultural development (Gann 1958, Hall 1965, Roberts 1976). It therefore proved hard to attract Europeans settlers to Zambia and a plantation economy did not really develop. Zambia few agricultural prospects compared to the cases of Malaysia and Sierra Leone discussed above. In spite of these adverse conditions native land was being redistributed on a large scale during the colonial period. The land distribution in Zambia in 1971, seven years after independence, is presented in figure 3.4. The distinction between a large class of smallholders and a confined amount of large land holders can be directly observed and, with a Gini-coefficient of 0.70, is even a little more pronounced than in

Malaysia in 1960. The lion share of these large holdings consisted of permanent pastures, meadows or lay waste. Why was land being redistributed towards white settlers in a British protectorate that seemed to offer little prospects for successful commercialisation of the agricultural sector?

Figure 3.4: The distribution of land area (bars, y-axis 1) and number of holdings (line, y-axis 2) per category of holding size (in hectares), Zambia, 1971



Source: FAO, *Report on the 1970 world census of agriculture*, Census Bulletin no. 11, Rome 1975, pp. 13-9

The state of Zambia is a product of the scramble of Africa. In the mid 19th century the territory of present day Zambia was inhabited by various Bantu speaking tribes such as the Lozi of Barotseland to the west and the Ngoni war tribes to the east. The borders of Zambia were delineated by a series of treaties between the British South Africa Company (BSAC hereafter) headed by the empire-entrepreneur Cecil Rhodes and local chiefs from 1888 onwards. Rhodes wanted to obtain the mineral rights of Katanga[43] and connect all British territories in Africa to construct a railway from the Cape to Cairo. In a region torn apart by devastating slave raids and endemic tribal warfare, it was not very difficult to find chiefs willing to exchange large concessions for protection. The Ngoni warrior tribes in the East were brought under control after a brief, yet decisive, war in 1897-1898. In 1911 the area north of the Zambezi was formally united in the British protectorate of Northern Rhodesia (Hall 1965).

The British government chartered the BASC with a far reaching mandate to expand its control in South Central Africa on behalf of the British authorities. The company was formally allowed to negotiate for exclusive monopoly rights on the exploitation of mineral deposits and to claim title to large tracts of unoccupied land. The parliamentary opposition

[43] Which, much to the dislike of Rhodes, became eventually a province of Belgian Congo.

against this charter was considerable, but it gave away under a mounting international tension in the region. In particular when gold was discovered in Southern Rhodesia and copper in Katanga, the strategic importance of Zambia (Northern Rhodesia) and its potential future economic value became simply too large to leave it to the Portuguese or the Germans.

The colonial office also opposed the settlement of colonists in Zambia out of concern for potential conflicts with the native population. Rhodes personally convinced the office, however, of the necessity of colonial settlement: it was the only way to effectively occupy and administer such a vast area. Huge land grants were, therefore, not only given to white farmers but also to pensioned military officers or ex-administers who had little or no experience with farming. Since Rhodes' company was financially responsible for the administration of Northern Rhodesia, the development of the agricultural sector was required to cover the incurred losses of the BSAC in this Central African backwater (Roberts 1976).

White farmers (Afrikaners and Europeans) settled close to the newly built railway in the centre of the country and in scattered highland areas where the incidence of malaria and tsetse was lower (Gann 1958: pp. 127-50). Due to the rapid expansion of mining industries in Southern Rhodesia and Katanga the demand for marketable food crops increased and this process was reinforced when the great prospects of Zambia's copper belt became apparent in the late 1920's. Maize had already been the major food crop of subsistence farmers and it became the major crop for the white farmers (FAO 1975). The international demand for copper surged as a result of the expansion of electrical and automobile industries during the Inter bellum. By the 1930's malaria was virtually eradicated in the Copper belt. Zambia became one of the world's major copper producers. In 1965 metals together comprised 96% of total exports, copper alone accounted for 91%. Tobacco, the largest export crop, accounted for just 1.3% of total exports (UN, International Trade Statistics Yearbook 1968).

Labour scarcity formed the major obstruction to the development of the mining industry and the commercial agricultural sector. The hut tax served a double purpose. It raised revenue and it drove up the supply of wage labour, since wage labour was the only channel to obtain tax money. The BSAC did not take much notice of the principles of indirect rule. Local rulers were responsible for the collection of the hut tax, but had little, if any, influence on the allocation of the money. The outward forms of the indigenous administration were preserved, but the authority of the local chiefs was structurally undermined by the continuous pressure on the young men in the local villages to leave their community for work in the mines (Hall 1965: pp. 103-5).

When the Colonial Office took over the administration of Northern Rhodesia in 1924,[44] the colonial state budget was still in deficit. The colonial administration started to assign native reserves where they forced indigenous tribes to live and transformed all land outside these reserves into Crown land. Large parts of the territories thus alienated were sold to white settlers. The native reserves were too small for the extensive use of land required under shifting cultivation and soil erosion lead to severe food shortages in the reserves in the 1930's. These shortages were unnecessary since large areas of land outside the reserves lay bare in expectation of new waves of white settlers which never arrived. The effect was that the numbers of young men from the villages offering their labour to the mines, towns and estates swelled.

The working conditions in the mines were brutal and wages were extremely low. Annual death rates in the range of 50 to 140 per thousand were no exception (Roberts 1976: p. 178). Financially things were improving. In 1928-1929 government revenue exceeded expenditure for the first time. The mining companies had obtained concessions of the BSAC in return for royalty payments. Mining profits were not reinvested in Northern Rhodesia and since the BSAC and the mining companies had their headquarters in London, taxes on profits had to be shared between Britain and Northern Rhodesia. The Copper belt grew rich, while the rest of the country remained poor (Roberts 1976: pp. 192-3).

The case of Zambia makes clear that the reallocation of land to European settlers was considered as an undesirable, yet necessary policy to effectively occupy the region, to consolidate British control and to support the exploitation of mineral resources in the region. Without its mining potential and the competitive threat posed by other European powers the region would probably never have experienced any substantial colonial settlement. The weak negotiation position of the indigenous tribes and the low feasibility of native agricultural development resulted in a political economic context where land distribution policies could be devised to undermine traditional subsistence labour norms and to enforce wage labour. The contrast with the political economic context in Sierra Leone and Malaysia is sharp, indeed.

[44] This overtaking followed from increasing opposition of white settlers to unify Southern and Northern Rhodesia under BSAC rule. With the Devonshire agreement the Company strengthened its legal hold on the mineral rights in Northern Rhodesia and got rid of the financial administrative burden. The white settlers were satisfied with the takeover since they were released from the domination of Southern settlers in policy affairs affecting Northern Rhodesia. The BSAC further concentrated on the exploitation of its mineral concessions. From 1953 Southern and Northern Rhodesia joined with Nyasaland in the Central African Federation (CAF) which was dissolved at the end of 1963 into the independent nations Zimbabwe, Zambia and Malawi (Hall 1965).

3.6 The colonial roots of Latin American land inequality in comparative perspective

From the case studies discussed above it has become clear that the redistribution of native land resources to colonial settlers can occur in the context of high economic prospects related to, for instance, the export of scale intensive cash crops such as rubber (Malaysia), but it can also occur in a political context in which large land grants (or sale at low prices) are used as a means to enhance political control by attracting settlers and raising government revenue, without obvious scale advantages in agricultural production. It has further been shown that the development of colonial land market institutions depended on the interaction between local geographic circumstances and endowment characteristics, the nature of prevalent local (i.e. pre-colonial) institutions and the capacity and willingness of the indigenous population and their elites to protect these institutions and, ultimately, the response of the colonial administration and settlers to these local factors with respect to their political and economic objectives. Taking the whole set of interacting factors together, a political economic context arises that determines the constraints faced by the colonial power to intervene in the land market. If we focus on the colonial roots of land inequality in Latin America from this perspective, three specific sets of interacting factors deserve attention:

1) The plantation economy: distance, climate, diseases, labour scarcity and social values.
In the historical context of pre-modern transport and communication technology, large parts of Latin America, similar to Zambia, were too remote to be linked to overseas markets. The evolution of American slave plantations producing cash crops for the Atlantic (mainly European) market, therefore, crucially depended on good access to the Atlantic coast. This did not imply that the cultivation of sugar cane, tobacco or cotton was unfeasible in the remoter areas of the continent, but rather that the demand for these crops was naturally (i.e. geographically) limited to local markets. The lion share of agricultural land was therefore devoted to the production of basic food crops, mainly maize, wheat, potatoes, beans, vegetables and fruit, or, to pastures or meadows for livestock production.

Plantation economies were also naturally constrained by the presence of a tropical climate with sufficient rainfall. These constraints further reduced the potential area in which plantation economies could thrive. The incidence of tropical diseases may also have constrained colonial settlement (Acemoglu et al. 2001). This could be a reason for the differences observed between Sierra Leone and Malaysia. Yet, for Latin America there is little evidence that the disease factor posed prohibitive constraints to the development of colonial plantation economies. However, the disease factor was clearly biased against the native population (Diamond 1999). Tropical conditions thus offered opportunities for

plantation agriculture and led in many cases to a large scale confiscation of former native land.

The results of the regression analysis (section 3.4) show that the ratio of labour to agricultural land (population density) is significantly negatively related to land inequality in the colonial sample, but not in the world wide sample (see table 3.2). This result suggests that, in the context of a colonial regime, the scarcity of labour enhanced land inequality. The case of Zambia also revealed that the pressing demand for chronically scarce labour induced repressive policies to manipulate the labour market. In the case of Malaysia the scarcity problem was solved by the import of Indian and Chinese indentured labour, freeing the way for the Malayan peasants to engage in the rubber economy, maintaining a relatively large degree of autonomy, which contributed to the stability of local communities and colonial society at large (that is, irrespective of the harsh treatment of immigrant labourers). The "solution" of the labour problem thus depends on the interaction between pre-colonial institutions and the policy principles of the colonizing power.

British colonial policy in the late 19th and first half of the 20th century rejected the institution of slavery, but in the 16th to early 19th century slavery was considered as an effective alternative to replace the rapidly disappearing indigenous labour resources. The plantation economies that evolved in the Caribbean and Brazil in the four centuries between 1492 and 1888 were unique in the extent and nature of its repression which can only be understood against the background of a social value system in which the idea of racial superiority was uncontested (Eltis 2000, Fogel 1989). The almost comprehensive collapse of the pre-colonial order which had to be respected in order to effectively occupy and rule the territory contributed to the political stability of slave economies. The changes in the moral perception of slavery and the active British foreign policy against slave trade and against later the entire practice of slavery fundamentally distinguish the American plantation economies from the case studies considered.

2) Land distribution in the core areas of Indian civilization: the changing balance of power

In absence of existing native claims to land the degree of freedom to implement land market regulations is large. In the Spanish American mainland the conquistadores were confronted with large sedentary Indian civilizations. The institutional remnants of the Inca and Aztec empires offered a good infrastructure for economic exploitation, but at the same time posed constraints to the implementation of new rules. It is one thing to conquer the capital city of a great empire, it is a wholly different thing to establish and maintain political control.

The early, mainly privately organised, groups of conquistadores disposed of a wide mandate to conquer and occupy new territory in name of the Spanish Crown. The official policy in the early stage of 16th colonization prescribed a separation between the native

Indian realm (republica de los Indios) and the Spanish realm. One of the reasons behind this policy was to reduce the risks of native uprisings and consequent costs of defence, and, at the same time, to prevent uncontrolled exploitation of indigenous labour and other forms of human abuse by Spanish colonists (such considerations were largely absent among the Portuguese in Brazil) (Bakewell 2004). It is noteworthy that such concerns, i.e. about the lack of supervision leading to abuse, also fed the opposition of British governors against the charter of the BSAC.

One of the pillars of early colonial political order was the encomienda system. The encomienda entailed the right to collect tribute in money, kind and labour from the subjects of local Indian chiefs.45 In return for their labour service the encomendero was held to show Indians the way in Catholic faith and to pay a descent wage. The Spanish Crown restricted the encomienda grant in three ways. First, the encomienda did assign a specific territory to the encomendero, but it did not entail land ownership. Second, the encomienda grant did not entail any rights of jurisdiction in affairs of the Indians subjected to labour services and taxation. Third, encomiendas were granted only for one lifetime and were not inheritable. These policy principles had to prevent the rise of a too powerful class of landlords that would pose a serious challenge to the position of the Spanish throne and to maintain political order by protecting the autonomy of traditional native systems of administration (Elliot 1984b, Williamson 1992, Bakewell 2004). This system thus created good incentives to occupy and control a vast empire, without actively redistributing land from indigenous peasants to colonial settlers (Keith 1976, Bakewell 2004).

Although the Spanish Crown set its own rules for the encomienda system, it is crucial to notice that for its effectuation it highly depended on the prevailing political structure. In both the Aztec and Inca empires the concept of wage labour was absent, but the concept of labour tribute services and taxation in kind was a core aspect of the economic power of the capital cities and the ruling dynasties (Williamson 1992, Bakewell 2004). In other words, the Spanish largely relied on pre-colonial institutions for the organisation and sustenance of the early colonial state (see also chapter two).

However successful the encomienda system may have been in its formative stage, it became a serious burden to the political consolidation of the colonial empire. Two crucial changes in Spanish American colonial society led to the demise of the encomienda system. The enormous decline of the number of Indians literally hollowed out the encomienda system. As a result of the catastrophic decline in Indian labour (and tax) supplies, agricultural output diminished and large tracts of arable land turned into waste land. Second, there were insufficient opportunities to make a living for the rising number of Spaniards flowing into the

45 Encomiendas could differ in size from 1.000 up to 50.000 tributaries depending on the military or administrative services of the encomendero and his place in the social hierarchy (Keith 1976).

empire. The monopoly on the economic surplus of a confined class of encomenderos drove huge numbers of newcomers into the class of soldados. According to Keith these totalled between 25 and 50% of the total Spanish population in Peru in the 1550's (Keith 1976: p. 51). In order to make most of their dream of booty and noble titles, the soldados lined up in faction wars, undermining the stability of colonial society.

In the mining regions urban employment opportunities increased, but these also attracted more immigrants than could be absorbed. The growing discontent of the new arrivals seriously challenged royal authority. In the third quarter of the 16th century the Spanish government set about to restrict the monopoly of the encomenderos on Indian labour. A new bureaucratic network of local officials, the Corregidores de Indios, was appointed to govern specified districts (corregimientos) in which they took over the assessment and collection of Indian tribute payments. The corregidores held their position for a limited term and were paid from the taxes that were collected in their district. All colonial settlers now received the chance to apply for an Indian labour grant for a pre-specified purpose and period of time. The present encomienda grants were transformed in some sort of state pension. This new governance structure was not only devised to break the power of the encomenderos, but also to rationalize the allocation of increasingly scarce Indian labour (Elliot 1984b).

The gradual replacement of the encomienda by the hacienda system in the second half of the 16th and 17th century seemed, with the advantage of hindsight, almost inevitable. At some stage the colonial administration had no choice but to start granting land on a large scale to cushion the frustration about the limited access to key production factors, i.e. land and labour. Agricultural employment was not only the main alternative for poverty-stricken soldiers, many encomenderos tried to transform their encomienda grant into a land grant as well. After all, land ownership was hereditary and provided a better income prospect and a more secured property holding than a degraded encomienda grant.

3) Land distribution in the periphery: distance and the political imperative of settlement

In order to effectively occupy and administer the vast New World territory colonial settlers were prerequisite. Between the capture of the Aztec capital Tenochtitlan by Cortes in 1521 and the foundation of Lima in 1535 and Santiago (Chile) 1541 lay only two decades. In the 1550's the borders of the Spanish American empire extended as far north as Alta California, as far south as the Rio Bio Bio and as far east as Asuncion (Elliot 1984a). Compared to the timeframe of effective settlement in British America this is unimagined. As in Zambia, the threat of international rivalry required a pro-active colonial strategy. Settlement was the key to prevent the breakdown and foreign penetration of such a vast and therefore feeble territorial entity. Confronted with this gigantic management problem, the Spanish Crown had to reside to a vast range of instruments to maintain control and land grants were one of the most

effective among them, especially in those areas where indigenous claims to land were virtually absent.

With increasing distance to the main centres of the colonial empire, the distribution of land became more political. Indeed, the landed aristocracy that gradually rose to power was mainly rooted in the peripheral rural areas. In the periphery land grants were the perfect instrument to buy loyalty of the military elite, the church and the administrative bureaucracy. The nobility started a ranch or a manorial hacienda, types of farming which either required little labour input or relied on coerced Indian labour. Land was taken away from local communities to reduce competition from smallholders and to increase the supply of landless labourers. The large land owners held land because of the indirect benefits it provided. These were related to social status and exclusive local political power and economic privileges, which were more difficult to obtain in the urban areas and the densely populated core areas. Keith concludes in his case study of coastal Peru,

"*Indeed, the largest and most aristocratic haciendas grew up in the northern valleys precisely because commercial agriculture was less profitable there, so that fewer Spaniards came to settle and there was less competition for land. In this sense the growth of large estates should be considered not so much the fulfilment of a universal Spanish dream as testimony that this dream was beyond the reach of all but a few*" (Keith 1976: p. 132).

It is helpful to consider the estimates of population density in 1820 as shown in table 3.4 to understand the meaning of the term "periphery". In the major part of the Iberian colonial empires population density, as measured by the amount of people per square kilometre of arable land (i.e. arable without severe soil and climate constraints), was so low, that the sale or grants of Crown land did not result in severe conflicts between natives and settlers or among settlers. Given the fact that urban centres grew throughout the colonial period, the density in many rural areas was much lower than 1 person per square kilometre, especially if we were to include non-agricultural land as well. Typically in these peripheral areas the ideal-type hacienda arose: vast self-sufficient rural enterprises specialised in food crops and ranching activities, forming the centre of dispersed local communities, where the landlord exerted monopoly rights on a wide range of allocation decisions. In these little kingdoms the caudillos lived the life of the nobleman.

The distribution of land among the political elite continued to take place in the post-colonial era in those regions where the land frontier was still open. For instance, around 1820 the lion share of the Argentinean pampas was still deserted (Rock 1987). Land inequality only became a burden when population started to increase exponentially in the 19th and 20th century and the demand for land started to increase accordingly. Table 3.4 also shows how

dramatic this increase in population density has been. As density levels started out from such low levels, the relative impact of increasing population pressure was much larger than, for instance, in Asian countries that had always been more densely populated. The ultimate consequence was that the value of the land of the latifundias increased rapidly. And land lords have undertaken all efforts to protect their dormant sources of wealth with the prospect of further increases in demand (Wright 1982, Huber and Safford 1995).

Table 3.4: Population density in Latin American countries and regions, 1820 and 2000

	Total population x1000 **1820**	Total population x1000 **2000**	Average annual population growth % **1820-2000**	Potential arable land x1000 ha	Population density capita / sq km **1820**	Population density capita / sq km **2000**
Caribbean						
Cuba	605	11,142	1.6	3284	18	339
Dominican Rep.	89	8,354	2.5	1693	5	493
Jamaica	401	2,653	1.0	546	73	486
Haiti	723	7,177	1.3	985	73	729
Puerto Rico	248	3,816	1.5	610**	41	626
Trinidad & Tobago	60	1,125	1.6	180**	33	625
New Spain core						
El Salvador	248	6,123	1.8	828	30	739
Guatemala	595	12,820	1.7	3896	15	329
Mexico	6,587	100,350	1.5	43207	15	232
New Spain periphery						
Costa Rica	63	3,711	2.3	2271	3	163
Honduras	135	6,201	2.1	4847	3	128
Nicaragua	186	4,813	1.8	4374	4	110
Panama	135	2,836	1.7	3688	4*	77
Andean core						
Bolivia	1,100	8,153	1.1	39653	3	21
Ecuador	500	12,920	1.8	11826	4	109
Peru	1,317	27,013	1.7	33532	4	81
Colombia	1,206	39,686	1.9	42946	3	92
South American periphery						
Argentina	534	37,498	2.4	78289	1	48
Chile	885	15,154	1.6	14524	6	104
Paraguay	143	5,586	2.0	10990	1	51
Uruguay	55	3,360	2.3	7288	1	46
Venezuela	718	23,917	1.9	33887	2	71
Brazil	4,507	175,553	2.0	239573	2	73

Sources: Population estimates from Maddison 2003; Arable land refers to total hectares of land suitable to the cultivation of agricultural crops under small to moderate constraints of soil, terrain and climate. Land facing severe constraints is excluded. The data and definitions of "moderate" and "severe" constraints are obtained from FAO/IIASA, Global Agro-Ecological Zones (GAEZ), 2000. Data for Puerto Rico and Trinidad and Tobago are obtained from Taylor and Hudson (1972: p. 303).
Notes: Population of Panama of 1850.

3.7 Conclusion

The cross-country comparison of Gini-coefficients of the land holding distribution presented in this chapter has shown that levels of Latin American land inequality are exceptionally high and characterized by remarkably low intra-regional variation. In an econometric attempt to explore the observed cross-country variety in land Gini's the explanatory power of specific geographic and endowment characteristics as well as specific colonial institutions were tested. The OLS regression results confirm that there is something specific about land inequality in former Iberian colonies. Controlled for other variables, they are estimated to have a land Gini of, on average, 21 to 22 percentage points higher than in non-Iberian colonies. The results have also raised some support, albeit less robust and significant, for a positive relation between favourable cash crop endowments and land inequality, and a negative relation between favourable food crop endowments and land inequality. Perhaps the most remarkable result was that population density only seemed to matter in a colonial context and not in the entire global sample. Former colonies with low levels of population density have higher levels of land inequality at the end of the colonial period.

However, given the crude meta-data (such as the Iberian colony dummy) employed in the regression analysis, given the absence of means to control for historical dynamics, and given the omission of qualitative institutional information, this test has produced some guidance in the search for potential venues of explanation, but it remains largely inconclusive on the nature of specific land market institutions and the interaction between various determinants of land inequality in a colonial setting.

The comparative case study executed in section 3.5 yields a more detailed picture. One of its main conclusions is that land inequality can evolve along very distinct paths. In the case of Malaysia it was argued that the redistribution of land and corresponding institutions arranging the alienation, the registration and sale of Crown land, was based on the viable economic prospects of the rubber economy. In Zambia the prospects of commercial scale-intensive agriculture were less evident given the land-locked location of the region and the obstacles of transportation to the coast. The intervention in the land market in Zambia was primarily based on political and strategic objectives of the colonial administration, rather than the prospect of economies of scale.

All three case studies revealed that the role of the indigenous population in the land allocation process was important. This was best visible in the case of in Sierra Leone, where rich tropical land endowments did not lead to the creation of a colonial plantation economy, since the indigenous population was able to raise the costs of settlement to prohibitive levels by the threat of revolt. In other words, besides the, mainly exogenous, local endowment conditions, the policies and institutions of the colonial administration were influenced by the

nature of pre-colonial institutions and the capacity and willingness of the indigenous population and their elites to defend their way of life. The interaction of all these factors together created a political economic context in which colonial land market institutions have taken shape.

The relationship between local land endowments and the evolution of land inequality in Latin America was most apparent in the formation of slave plantations along the tropical Atlantic coast of the South American continent and in the Caribbean. The scale advantages in the production of sugar and other tropical cash crops employing slave labour created incentives to set up large estates, but these were only viable in a context where 1) tropical diseases did not prohibit settlement, 2) the relative distance to the Atlantic market was limited and 3) the prevailing value system legitimised ethnic segregation on the basis of the believe in ethnic hierarchy and white superiority. However, the plantation economy was not a typical Latin, but rather a typical European colonial phenomenon. Regarding the role of, mainly exogenous, endowment characteristics, including geographic features, it was not so much the constraints of a tropical climate, but rather the effect of relative distance that set the ultimate constraints to the spread of the plantation system. The major part of Latin America was simply too remote to become connected to the Atlantic market.

To understand why land inequality has become such a salient feature of Latin American society, we should direct attention to the evolution of colonial land market institutions in the vast interior of the South and Central American mainland. Some remarkable parallels with the case of Zambia appear. In both cases a vast territory was to be occupied in a very short time and settlement was regarded as the backbone of administrative control. The geographical remoteness of large parts of these regions and the low (average) levels of population density offered limited prospects for a thriving commercial agricultural sector. The supply of food surpluses to mining centers had priority. The sale and grant of lands was primarily used for internal political and (international strategic) reasons. In both cases a legal separation of native and settlement realms was introduced as well as harsh tax systems aimed at raising the supply of wage labour and government revenue.

A major difference, except for the historical and global context of the respective colonial ages, resides in the characteristics of the settlers who obtained large estates. In Zambia, apart from retired British military and government officials, also farmers were attracted. In Spanish America the large grants of land almost exclusively went to army leaders, the church and government officials, that is, people that belonged to or were well connected to the nobility. The social status attached to estate ownership and the management problem of the Spanish Crown made land grants the most effective instrument of political control. Indeed, the average patron of a Latin American hacienda belonged to an entirely class

than the average yeoman obtaining a medium-sized plot of farmland in the North Eastern parts of British America.

The circumstances leading to the evolution of the hacienda as the dominant unit of organisation in so many rural communities depended largely on the presence of Indian civilizations. In the core areas of the Spanish American empire the hacienda system evolved from the encomienda system as restrictions on land ownership under the latter were gradually abolished. The collapse of indigenous rural institutions as a result of the demographic crises created the void and a labour scarcity problem forcing the Spanish Crown to change its land market policies. In the periphery, the potential of social conflicts over land were smaller and the demographic crises had less dramatic implications for the prevailing rural structure. In these areas the colonial heritage of Latin American land inequality originated.

Considering the close connection between local political control, loyalty to the Crown and the monopolisation of the key production factor of pre-modern society, land, it becomes clear why land inequality has been so persistent in Latin America. The large overlap between and the high concentration of economic and political power, more than anything else, explain why the problem of rural poverty and inefficiency proved so difficult to resolve. The incentives of the elite to give up their monopoly, in the face of potential scarcity in the supply of rural labour, were low and the internal consensus was strong. As land prices started to rise in the wake of the demographic transition of the modern era, the incentives to open up the land market even further decreased. The political nature of land inequality also explains why agendas of agrarian reform were doomed to fail.

Chapter 4

The Development and Distribution of Mass Education, 1870-2000: Persistent Inequality or Breaking with History?

4.1 Introduction

In the highly stratified rural societies of colonial and early post-independent Latin America, education was not regarded as a necessary requirement for a labour force that predominatantly consisted of subsistence farmers, *péones*, serfs and slaves. Given the large concentration of land ownership, the collateral assets needed to invest in education remained beyond reach for all but a few. Since it was not clear how the rents of public schooling could be appropriated, the landowning elites were not keen on paying taxes to invest in educational expansion. Education for the masses was perceived as part of an undesirable process of civil emancipation undermining the social order and the distributional status quo (Lindert 2004, Galor and Zeira 1993, Acemoglu and Robinson 2006).

Engerman and Sokoloff (1997, 2000) show that literacy rates in LAC's lagged behind those in North America during the entire 19th century and the first decades of the 20th century. Within Latin America they find literacy rates to be higher in the former colonial periphery than in the former colonial core. Around the year 1900, Argentina and Uruguay recorded literacy rates slightly exceeding 50%, which was considerably higher than in Mexico and Brazil recording 22% and 26% respectively, but much lower than the 83% of Canada in 1861 and the 80% of the USA in 1870. Yet, during the 20th century primary schooling became universal in nearly all LAC's and the post-war statistical reports indicate that educational investments and attainment dramatically increased since 1950 (UNESCO, *Statistical Yearbook*, various issues).

With the on-set of modern economic growth the share of agriculture in Latin American GDP decreased notably. Consequently, the direct contribution of land inequality to income inequality diminished rapidly. In the wake of a rising demand for human capital by technology and skill-intensive sectors, the distribution of education became of paramount importance for the distribution of income. Hence, where land inequality had largely constrained the opportunities of social mobility in the pre-modern settler colonies, schooling became the primary determinant of social mobility in the 20th century.

The present chapter analyses the long run development and distribution of mass education in Latin America from 1870 to 2000 in a global comparative perspective. It pays specific attention to the *timing* and *pace* of primary school enrolment expansion. The central question is to which extent the initial conditions of inequality have affected the development and distribution of mass education in the long twentieth century and to which extent these effects were still present at the start of the 21st century. Can we identify clear break points in the paths of accumulation and distribution? How slow or fast was the spread of mass education in comparison to other countries? How long did it take before the diffusion of mass education led to a more egalitarian distribution of schooling years attained? And did the spread of mass education come along with improvements in the quality of the educational system or did it go at its expense?

Assessing such comprehensive questions inevitably invokes a certain degree of subjective judgement and a high degree of generalisation, but a global comparative framework helps to place some contested "stylized facts" of Latin American educational development in perspective. Literature interprets the stylized facts of educational progress in different ways. Most scholars would argue that the unequal distribution of education has constrained Latin American economic growth and, more generally, can be seen as a crucial determinant of high income inequality. Some recent studies using the Gini-coefficient of the attainment distribution, do not find evidence for such a relationship however. This raises the question whether these studies pick up the effects of recent investment efforts in primary and secondary education, or that these observations are related to the use of different concepts and indicators of educational inequality? These diverging views on the extent of educational inequality in recent years and its impact on income inequality are specifically addressed in this chapter.

The main conclusions are that the use of different indicators to a large extent explains the different views on the state and impact of educational inequality in Latin America. In fact, the increase in primary school enrolment rates was no slower or faster than could be expected on the basis of the patterns observed in the rest of the world. It has been faster than in the most advanced industrial countries and it was notably slower than in the poorest developing countries in Sub Saharan Africa. The expansion of school enrolment came along with a comparatively egalitarian gender distribution from the late 19th century onwards. Yet, more than in any other region of the world, the expansion of primary education took place at the expense of the quality of education. A comparative analysis of the grade enrolment distribution reveals that it took even the most advanced LAC's such as Argentina, Chile and Uruguay at least four decades to achieve acceptable levels of grade promotion and school completion after having achieved full primary school enrolment rates. Hence, historical school enrolment rates only make sense in combination with grade enrolment and school

completion data. The reduction of educational inequality gained momentum in the 1980's, when grade repetition and pre-completion drop out rates were reduced faster than in other developing regions in the world. So from a long run comparative perspective, the outlook at present is in many respects much better than a half century ago.

This chapter is structured as follows. Section 4.2 starts with an introduction of the empirical literature and pays attention to the various definitions of educational inequality concepts and indicators. Section 4.3 develops the long run perspective and discusses the diffusion of mass primary schooling using gross enrolment rates for the period 1870-2000. Section 4.4 shifts attention towards the distribution of attainment in the post-war era and clarifies why different indicators, such as the Gini-coefficient and the standard deviation of attainment, reveal such different views on the comparative level of educational inequality in Latin America. Section 4.5 focuses on the grade enrolment distribution approach. Section 4.6 presents the conclusion.

4.2 Educational inequality in Latin America: different concepts, different indicators, different views

At face value the concept of "educational inequality" appears rather straightforward: educational inequality refers to the extent of "variation" around the "average" level of education, where a larger amount of variation implies a higher level of educational inequality and vice versa. However, transforming this definition into a workable comprehensive measure of educational inequality is highly complicated for several reasons. First, the amount of variation observed depends on the subject categories included, that is, who compares to whom? Second, what do we mean by the "level" of education? The number of years of schooling attained, the level of education completed, the quality of education enjoyed or student performance? How do we measure and compare the qualitative aspects of education?

The limitations of schooling data are well known and basically pre-define what is meant by "educational inequality" in literature. Differences in knowledge and skills embodied in persons are in practice approximated by accounting for interpersonal variation in years of schooling attained. Given the long run perspective adopted in this study, only crude indicators such as literacy rates and school enrolment rates are available for the entire period 1870-2000. It is important to keep these limitations in mind, although it will be argued in section 4.5 that the grade enrolment distribution approach provides more insight in educational quality differences, which considerably nuances historical comparisons of enrolment and attainment in the post-war era.

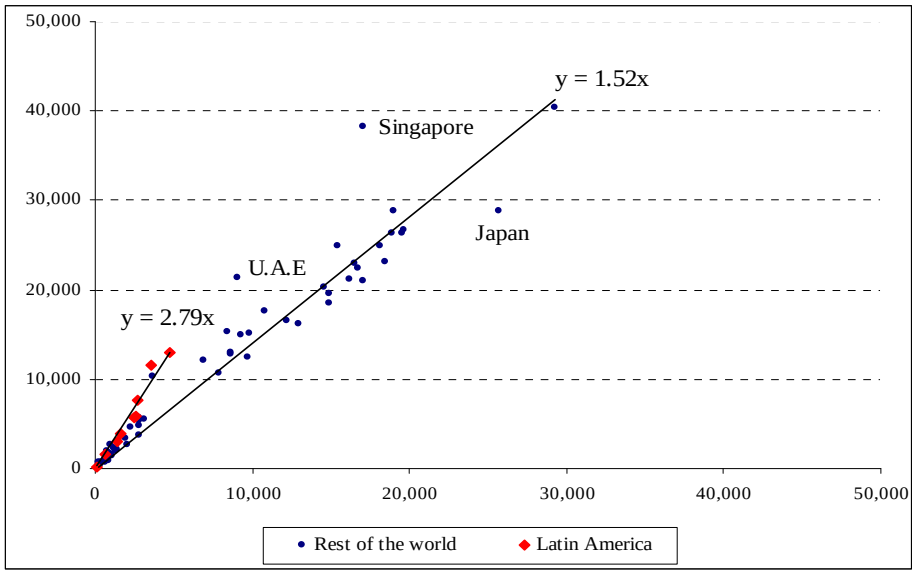
A second concern is that the distribution of education cannot be analysed in a meaningful way without controlling for the "accumulation" or the "average level" of education. Whenever societies start to broaden their educational basis, increasing differences in educational experiences inevitably occur. Full primary school enrolment rates cannot be established overnight and at some point half of a nation's population will have received at least some schooling, whereas the other half has not. Given the natural ceiling to the amount of education each individual can receive, some convergence in the distribution of education is endogenous to the expansion of education beyond a certain level as well. Hence, comparing the distribution of attainment levels across countries at a fixed point in time, without controlling for the stage of educational development, will give results that partly reflect cross-country differences in educational inequality and for another part (and this can be the major part) differences in the expansion of education, irrespective of the employed unit of measurement. Therefore, this study chooses to explicitly link the analysis of educational development and distribution by focusing on the *time* it takes societies to achieve certain benchmark levels of primary school enrolment, grade promotion or school completion. The idea is that the longer it takes before such benchmark levels are reached, the longer the negative distributional consequences of a transition towards mass education persist.

Despite these methodological constraints, many scholars find evidence for the conclusion that educational inequality in Latin America was and still is comparatively large. For instance, Birdsall and others show in various studies that the accumulation and distribution of education during the second half of the 20th century in Latin American countries has developed less favourably than in East Asia. The unequal distribution of education in Latin America is found to contribute significantly to the region's modest labour productivity growth and persistent high levels of income inequality (Bourguignon 1993, Birdsall and Sabot 1994, Park et al. 1996, Birdsall et al. 1997, Birdsall 1999). This conclusion is based on the analysis of primary, secondary and tertiary school enrolment and completion rates, the standard deviation of years of schooling attained, and various measures of educational expenditure. These indicators reveal, among other things, a bias in public investment towards higher levels of education combined with relatively poor primary school completion rates in LAC's. Birdsall et al. (1997: p. 125) conclude that,

"*The unequal distribution of education in Latin America, in terms of both quantity and quality, constrained economic growth in the region by resulting in forgone opportunities to increase labor productivity and change household behaviour. At the same time, the relatively small size of the educated labor force and the resulting high scarcity rents commanded by educated workers contributed to high inequality in the distribution of income*."

Morley (2001) underlines this view arguing that relative wage levels of university graduates are still higher in LAC's than in other parts of the world, despite the rapid increase in, and supply of, university graduates since the 1970's. Londoño and Székely (2000) find that the increase in wage differentials between 1982 and 1995 corresponds to increasing skill differentials across various groups of wage earners. A recent report of Euromonitor International comparing income distribution across countries lists the ratio of average disposable income of people who completed tertiary education to the average disposable income per capita. Figure 4.1 presents the entire sample, subdivided into LAC's and the rest of the world in a scatter diagram. The x-axis shows the average per capita disposable income and the average disposable income of the tertiary educated is at the y-axis. Appendix table A.4.1 presents the underlying data and lists all the countries included.

Figure 4.1: Average per capita disposable income (*x-axis*) versus average disposable income of tertiary educated (*y-axis*) in 2000 (1995 US $)



Source: Euromonitor International (2007) *World Income Distribution 2006/2007*, 4th edition, pp. 102-7. See also appendix table A.4.1.

The estimated linear functions in the figure -with the intercept of both equations set at zero- leave little doubt about the distinctive relation between levels of education and net disposable income in Latin America. A closer look at the figures in the appendix table shows that the Latin American average "tertiary education premium" of 251% is only exceeded by three non-Latin American countries, i.e. Egypt (251.5%), Jordan (260%) and Saudi Arabia (278%). The average of the rest of the world is 164%. These figures suggest that, either, a) similar

skill-differentials in Latin America lead to higher wage differentials than in other parts of the world, or b) skill-differentials per se are larger than in other parts of the world, or c) both.

However, some recent studies find that the levels of educational inequality in Latin America are comparatively modest and certainly not way out of line with other countries (Castello and Domenech 2002, Thomas et al. 2001, Sahn and Younger 2004). These studies also find that the observable association between educational inequality and income inequality in Latin America is weak (World Bank 2004). All these studies have one thing in common: they use the Barro and Lee dataset of educational attainment of the working age population to calculate Gini-coefficients of the attainment distribution. The Gini, so it is argued, is a more comprehensive inequality indicator than such "partial" indicators as school enrolment rates, completion rates or education expenditures per level of education. The recent World Bank report *Inequality in Latin America, Breaking with History?* (2004: p. 153) concludes on the basis of the estimated relationship of educational Gini's and income Gini's that,

"*Latin American countries appear to have "too much" income inequality, given their levels of inequality in years of schooling* […] *However, before jumping to the conclusion that educational disparities are definitely not the reason for high income inequality in Latin America, it should be pointed out that the years of schooling is a very imperfect measure of the human capital stock embodied in a person*".[46]

This conclusion is important for two reasons. First, it leaves open the possibility that educational inequality resides mainly in quality differences rather than in differences in years of schooling attained. Secondly, the educational Gini apparently leads to other inferences than the broader set of estimates applied by other studies. It is also noteworthy that Cole et al. (2004) go a step further claiming that, on the basis of educational attainment data, a lack of catching up growth of Latin America versus the US can *definitely not* be explained by a lack of human capital accumulation. The authors argue that several LAC's (Argentina, Chile, Uruguay) obtain equal or higher attainment levels in the labour force in 1990 than many of the East Asian and European development successes such as Portugal, Spain and Singapore. Moreover, the average ratio of human capital to output is found to be 40 percent higher in Latin America than in the USA:

[46] This part of the World Bank report is largely based on studies by Castello and Domenech (2002) and Thomas et al. (2001).

"*We conclude that human capital is not the major factor in explaining Latin America's TFP gap, nor does it appear to play an important role in Latin America's long run stagnation.*" (Cole et al. 2004: p. 14)

So the question arises whether recent studies are the first to pick up effects of recent changes in the distribution of education? Does it matter which type of data and indicators were used: enrolment or attainment data, the Gini-coefficient or the standard deviation? And how important is the distinction between educational quality as compared to inequality in years of schooling attained?

4.3 The spread of primary education in Latin America, 1870-2000

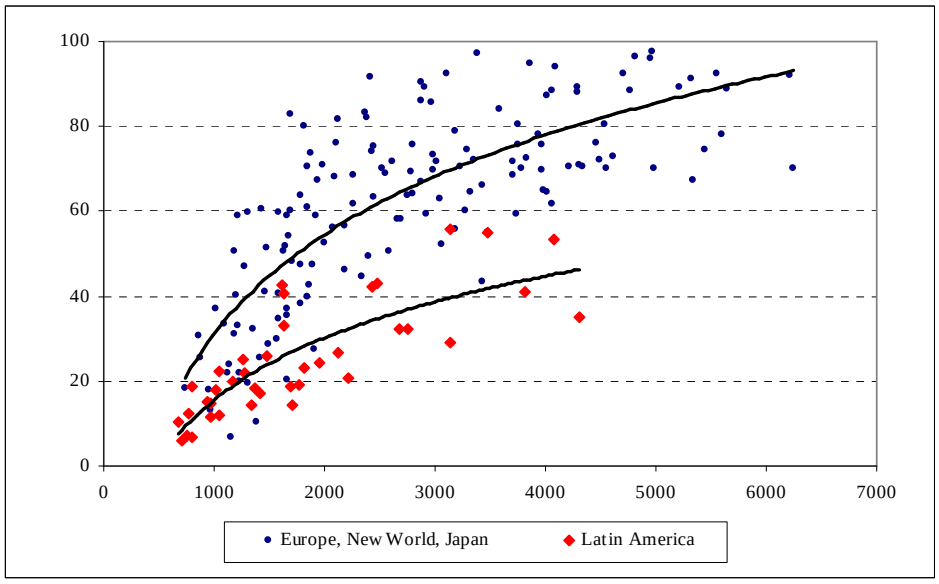
Latin American gross primary school enrolment rates for the period 1870-2000 are presented in appendix table A.4.2. The figures refer to the ratio of enrolled children in the age group 5 to 14 over the country specific primary school age group. The pre-war estimates are retrieved from Lindert (2004) and Mitchell (2003). The table shows that in the year 2000 all LAC's reported gross enrolment rates surpassing 100%, except Haiti.[47] The table further shows that the acceleration in the spread of education in the majority of LAC's took place in the course of the 20th century and that the intra-regional dispersion in primary school enrolment rates has been large until at least the 1970's. When concentrating on the *timing* of the transition towards mass education we can roughly distinguish three groups. In the last three decades of the 19th century the expansion of primary schooling is most notable in Argentina, Chile, Costa Rica and Uruguay.[48] The British colonies Jamaica and Trinidad & Tobago recorded the fastest rise and were the only two countries recording a rate exceeding 50% in 1900. After gaining independency from Colombia in 1903, Panama joined the club of "early movers". During the 1920's and 1930's the rise in gross enrolment rates started to accelerate in Bolivia, the Dominican Republic, Ecuador, El Salvador, Mexico, Brazil, Peru and Venezuela. Guatemala, Honduras, Nicaragua and Haiti were typically "late movers", where the acceleration occurred only in the early post-war years.

[47] Haiti recently stopped reporting enrolment data altogether. Contrary to net enrolment rates, gross enrolment rates surpass 100% since they are calculated as the ratio of the number enrolled over the number of children in the specific school age category. For example, a primary education system containing eight grades the age category is usually 4 to 12. All children enrolled of 13 years or older are taken into account in the gross enrolment rate, whereas they are excluded in the net enrolment rate.

[48] Since a lot of observations for the period 1870-1900 are missing we have to be cautious: a backward extrapolation of observed trends suggest that the transition towards mass education took place somewhere between 1870 and 1900 in Costa Rica and Uruguay. Literacy rates recorded in the late 19th and early 20th century also support the idea that these countries were ahead of the rest of the region (Thorp 1998, Mariscal and Sokoloff 2000).

This classification reflects some important features of Latin America's colonial legacy. The "early movers" constitute the countries in the former colonial periphery where the impact of Iberian metropolitan policies had been markedly smaller than in the core areas such as New Spain and Peru. These countries further appear to have been a) the most urbanised, b) the ethnically most homogenous (with larger shares of Europeans or Creoles), c) comparatively less unequal rural societies (especially Argentina and Costa Rica) and, d) of British colonial origin (Jamaica and Trinidad and Tobago). The "late movers" are typically the most stratified and least urbanised rural societies characterised by large ethnic heterogeneity and a relatively small Creole elite. Yet, the majority of LAC's fell in between these extremes and started to invest in mass education in the early 20th century, especially during the 1920's and 1930's.

Figure 4.2: Scatter plot of primary school enrolment rates (age group 5-14) and GDP per capita (1990 Geary-Khamis US $), Latin America versus Europe, other New World countries and Japan, 1870-1930



Sources: Maddison 2003, Lindert 2004 and own calculations based on Mitchell 1993. Notes: Countries included: Argentina, Brazil, Chile, Colombia, Costa Rica, El Salvador, Guatemala, Mexico, Peru, Uruguay (Latin America); Countries included in the benchmark sample: Austria, Belgium, Canada, Denmark, Finland, France, Greece, Hungary, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Romania, Spain, Sweden, Switzerland, UK, USA.

Figure 4.2 plots gross enrolment rates against levels of GDP per capita for a large sample of LAC's and a benchmark sample of economically advanced countries between 1870 and 1930. It turns out that controlling for GDP per capita, LAC's had substantially lower enrolment rates then the control group. The two observations that come close to the trend line of the

control group are Costa Rica and Mexico in 1930. Argentina and Chile exceed the Latin American trend line, while Brazil, Guatemala, Peru and Uruguay are constantly situated below the trend line. Apparently, LAC's were, at least from a macro-economic point of view, "too rich" for their comparative rates of enrolment. Yet, given the historically large inequality in the distribution of income, assets and wealth among Latin American citizens, the choice for schooling was in many individual cases hampered by a lack of resources. Hence, it seems validated to speak of a distinctive "Latin American path" of educational development which relates to a suboptimal distribution of economic resources.

Early Latin American educational development from a political economic perspective

The "delay" in the transition towards mass education was not so evident during the first years after the wars of independence in the early 19th century. Influenced by European enlightenment ideology and the spirit of revolution, education for the masses became an important topic on the political agenda of the early post-colonial administrations. The decree of the Peruvian liberator San Martin in 1822 illustrates the revolutionary spirit,

"*Public instruction is the primary need of all peoples. Any government that does not promote it is guilty of a crime which later generations, have the right to avenge, while cursing its memory*." (UNESCO 1958, 836-7)

In 1825 another famous liberator, Simon Bolivar, ordered the establishment of a teacher training school in every departmental capital of Peru as part of an ambitious campaign to implement the revolutionary agenda. Public instruction was thought to be a vital instrument for the promotion of social, cultural and economic development of the independent Latin American nation states. The early ideas about public primary education were based on three leading principles: it should be compulsory, secular and free of charge. However, when post-revolutionary conservative regimes took over, the momentum disappeared as fast as it had arrived. The three principles not only encountered practical problems but also met with severe political opposition.

Endemic political instability and chronic budget deficits impeded the required educational investments and complicated the formation of an efficient bureaucratic apparatus to initiate and monitor the process. But apart from that, it was the colonial legacy of social and economic inequality which undermined the sense of urgency among the elite to raise redistributive taxes to finance public education (Engerman and Sokoloff 2000, Engerman et al. 2001, Mariscall and Sokoloff 2001). The meagre perspectives of social mobility for the poor reduced the perceivable benefits of, and consequently, the popular demand for primary

schooling. The perceived benefits of schooling were even lower when poor families were asked to contribute to educational expenses via immediate financial contributions or taxation. Finally, the principle of secular education met with severe resistance by the Catholic church. The church perceived public education as one of its traditional domains and feared to loose its monopoly control over a beloved medium to spread religious ideology and maintain religious authority (Bakewell 2004).

Hence, it is not surprising that education remained the privilege of a small upper class during most of the 19th century (Spalding Jr. 1972, Vaughan 1975, Yeager 1991). Education was deemed important as a means to strengthen national identity, but it was actually used as an instrument of political control in the hands of the elite (Brock 1985). The *World Survey of Education* of the 1950's (UNESCO 1958) and an ECLAC report one decade later (ECLAC 1968) sum up a long list of problems encountered in the expansion of primary education in various LAC's. Among these are 1) a lack of financial resources,[49] 2) a lack of well educated teachers, 3) geographical barriers hampering the establishment of schools and school attendance in isolated rural areas, 4) the language barrier in countries with large indigenous populations, 5) the indifference towards primary education on behalf of poor and low educated parents, 6) the practice of child labour provoking irregular school attendance, 7) insufficient monitoring agencies to detect poor quality and enforce compulsory attendance.

These arguments suggest that a historical legacy of inequality adversely affected the expansion of mass education in more than one way. There was a lack of political will to introduce redistributive taxes to invest in schooling for the lower income classes. Yet, the confined opportunities of social mobility in the highly stratified Latin societies *per se*, lead to low perceivable benefits of education among the lower social classes. Hence, institutional changes were an absolute requirement to break out of this low level equilibrium (Parrado 1998). The conclusions of the Brazilian contribution to the *World Survey of Education* nicely illustrate how the poor quality of schooling blends with low perceptions and, consequently, a persistence of poverty and inequality,

"A school which is not felt to be absolutely necessary, because of its meagre curriculum, because the basic equipment for life which it gives its pupils is such a poor modicum, must inevitably be a school to which children only go if they have nothing more important to do." (UNESCO 1958, 173)

[49] As stated above, this argument does not hold from an aggregate economic viewpoint, but it does make sense from a distributional point of view.

The "delayed" transition towards mass education in Latin America can be explained from its specific historical heritage. A different question is whether the expansion of primary education, *once underway*, was any slower or faster compared to other regions? And were the "early movers" in Latin America any slower or faster than their neighbours?

Table 4.1 shows the average annual increase of gross primary enrolment rates in a sample of LAC's and non-LAC's from 1830 to 2000 (for the underlying data see appendix table A.4.1.) The average annual increase of the gross primary enrolment rate refers to the first observable decade until the decade of "complete" enrolment (labelled average speed) and in the three consecutive decades with the most rapid expansion observed (labelled maximum speed).[50]

Table 4.1 underlines the argument of Clemens (2004) that present-day developing countries expand school enrolment at a much faster pace than the early industrialising countries back in the 19th century. In terms of the timing and the rate of expansion LAC's mostly fell in between the "early movers" in the industrialising world and the "late movers" in the poorest parts of the developing world. For instance, with average annual increases between 0.8 and 2.6 all LAC's outpaced the USA between 1830 and 1870 (0.6), while Nigeria (1.9) and Malawi (3.3) were considerably faster than any LAC in the second half of the 20th century.

Within Latin America the negative correlation between the timing and the pace of expansion can not be observed. Early movers such as Argentina, Chile and Costa Rica recorded an average annual increase of 1.1 percent, which equals the Latin American average. Yet, late movers such as Honduras and Nicaragua achieved average annual increases of 1.4 and 2.1 respectively, which is clearly higher than the regional average. The Dominican Republic, Venezuela, Peru and El Salvador also show higher rates of expansion during the mid-twentieth century.

[50] It is assumed that countries reporting an enrolment rate of 95% or higher at the start of a particular decade will achieve a full enrolment rate (100%) in the same decade.

Table 4.1: Average annual increase of gross primary enrolment rate, Latin America versus a selection of non Latin American countries, 1830-2000

		Average annual		Three decades of
	1870-2000	**increase**		**maximum increase**
Argentina	1880-1950	1.1	1890-1920	1.3
Bolivia	1900-1990	0.8	1930-1960	1.4
Brazil	1870-1980	0.8	1920-1950	1.2
Chile	1880-1960	1.1	1880-1910	1.8
Costa Rica	1890-1960	1.1	1890-1920	1.0
Dominican Rep.	1930-1960	1.9	1930-1960	1.9
Ecuador	1920-1970	1.2	1930-1960	1.4
El Salvador	1920-2000	1.1	1930-1960	1.8
Guatemala	1920-2000	0.8	1970-2000	1.5
Honduras	1930-1980	1.4	1940-1970	2.1
Jamaica	1870-1960	0.8	1870-1900	1.2
Mexico	1880-1970	0.8	1920-1950	1.3
Nicaragua	1950-1980	2.1	1950-1980	2.1
Peru	1900-1970	1.3	1920-1950	1.9
Trinidad & Tobago	1870-1960	1.0	1870-1900	1.4
Uruguay	1900-1960	1.3	1930-1960	1.9
Venezuela	1930-1960	2.6	1930-1960	2.6
Latin American average		**1.25**		**1.64**
	1830-1930			
USA	1830-1870	0.6	1830-1870*	0.6
Austria	1840-1920	0.7	1870-1900	0.8
Belgium	1830-1920	0.5	1890-1920	1.1
France	1830-1880	0.9	1850-1880	1.0
Spain	1860-1930	0.6	1900-1930	0.8
UK (England-Wales)	1830-1900	0.7	1830-1860	1.1
Japan	1870-1910	1.1	1870-1900	1.1
Average		**0.70**		**0.92**
	1930-2000			
Philippines	1930-1960	1.6	1930-1960	1.6
Thailand	1930-1980	1.3	1930-1960	1.5
Korea, rep.	1930-1960	2.6	1930-1960	2.6
Turkey	1930-1960	2.5	1930-1960	2.5
Kenya	1930-1980	1.7	1950-1980	2.5
Nigeria	1930-1980	1.9	1950-1980	3.1
Malawi	1970-2000	3.3	1970-2000	3.3
Average		**2.12**		**2.44**

Source: Lindert 2004; UNESCO, *World Survey of Education*, 1958; UNESCO, *Statistical Yearbook*, various issues 1966-1998; * USA average over four decades due to lack of intermediate observations.

Perhaps the most remarkable stylized fact of educational development in the late 19th and early 20th century relates to the comparatively equal gender distribution of primary school enrolments in Latin America. Appendix table A.4.3 shows the percentage share of females in primary school enrolment for the years 1890-1902, 1950-54 and 1990-97. The table also shows the female shares in secondary and tertiary enrolment for the latter two periods. It turns out that the female share in primary schooling from the earliest years of the transition onwards were more or less comparable to those in the most advanced European economies and the USA and this remained the case throughout the 20th century. The Latin American average percentage share in the period 1890-1902 is 44.3%.[51] Compared to the gender distribution in European countries such as Portugal and Greece and Asian countries like Japan, India, Sri Lanka and Myanmar this figure, indeed, is surprisingly high.

Comparatively low levels of gender inequality can also be noted in secondary and tertiary education. In the 1950's the average share of female in secondary education was 41.1% and this number increased to 52% in the 1990's. Although it appears that some of the Asian countries such as Japan and Sri Lanka had overtaken the Latin American average in the 1950's, the figure still compares well to such countries as Greece or Spain, let alone the developing countries in Africa and the Middle East. In tertiary education the figure of 23.8% in the 1950's is even higher than in the Netherlands or Switzerland. Yet, it should be noted that the comparatively high female tertiary enrolment shares are likely to be the result of high social and economic inequality between Latin American families. The rich elite families are able to send all their children, boys and girls indifferently, to college or university. In the Netherlands and Switzerland enrolment in tertiary education was accessible for middle or lower income groups (with or without public support), but boys were the main beneficiaries of the increasing public investments in education in first instance. It should be noted that the comparatively low levels of gender inequality can also be observed in the semi-feudal societies of Southern Europe, whereas in the Asian countries tertiary education appears to have been an exclusive male privilege until, at least, the 1950's.[52]

In sum, the expansion of mass education was delayed, but once underway it did not move distinctively slower or faster than could be expected. There are good reasons to interpret the

[51] Since this average includes many of the most advanced LAC's at that time, and excludes most of the less advanced LAC's this arguably is an overestimation. Nevertheless, the estimate for Guatemala of 32.8% shows that even in the poorest LAC's the gender distribution was fairly egalitarian when compared to all Asian countries observed.

[52] The finding of low comparative levels of gender inequality in Latin America is in line with the results of Camps et al. (2006) who show that gender wage disparities are much lower in Latin America than in several East Asian countries in the second half of the 20th century.

Latin "delay" as the consequence of prevailing social, economic and political inequality during the 19th century. There were sufficient resources on an aggregate economic level that could have been devoted to educational expansion, but the resistance to redistributive taxation in combination with low perceived benefits of education in societies characterised by confined opportunities of social mobility distorted the required incentives to invest in primary schooling. These forces obviously lost strength in the course of the 20th century. Given the historical relationship between economic inequality and the delay in enrolment expansion it is quite remarkable that the gender distribution of enrolment has been rather egalitarian, even in comparison to some of the early industrialised countries, but especially in comparison to Asian, African and Middle Eastern countries.

4.4 The distribution of educational attainment, 1950-2000

This section turns to the question how educational expansion impacted on the distribution of education. To analyse this issue it focuses on attainment data in the present section and on grade enrolment data in the next section. A considerable part of current research on educational inequality is based on educational "stock", rather than educational "flow" data. Stock data refer to the years of schooling attained or the level of education completed by the labour force in a given year (Psacharopoulos and Arriagada 1986, Nehru et al. 1995, Barro and Lee 2001)[53]. Attainment figures are widely used for calculating Gini-coefficients (Castello and Domenech 2002, Thomas et al. 2001, Sahn and Younger 2004, World Bank 2004), standard deviations (Ram 1990, Birdsall 1999) and a measure of the size of the "educational middle class" such as the percentage share that has completed secondary school at the highest level of schooling attained (Birdsall et al. 1997).

It turns out that the studies based on Gini-coefficients of the attainment distribution tend to take a milder view on the extent of educational inequality in Latin America than

[53] See Barro and Lee (1993) and (2001). Their data are derived from the UNESCO Statistical Yearbooks. By means of a perpetual inventory method enrolment rates are reconfigured into attainment levels of two samples of the working-age population; ages 15-64 and ages 25-64. In addition Barro and Lee have calculated the distribution of the working age population over seven categories of attainment levels. The distribution of the labour force among these categories refers to the highest level attained: 1) no schooling, 2) uncompleted primary schooling 3) completed primary schooling, 4) uncompleted secondary schooling, 5) completed secondary schooling, 6) uncompleted tertiary schooling and 7) completed tertiary schooling. Compared to previous cross-country datasets (Kaneko 1987, Psacharapoulos and Arriagada 1986) the Barro and Lee dataset has been a significant improvement in terms of coverage and distributional detail. The data are sensitive to the assumptions applied in the perpetual inventory method used to determine the working age population. De la Fuente and Domenech (2002) have revised the data to correct for inconsistencies in a sample of OECD countries. However, these inconsistencies are unlikely to disturb the comparative results of different indicators using the same dataset.

international comparisons of standard deviations or secondary school completion shares. In fact, each of these three indicators throws a highly distinct, and sometimes even opposing, light on the extent of educational inequality in countries and regions. Table 4.2 compares the regional averages of the three indicators in the year 2000 for a sample of 101 countries using strictly identical attainment figures from the Barro and Lee dataset (Barro and Lee 2001). The Gini-coefficient (G) of the attainment distribution is defined as,

$$G = \frac{\sum_{i=1}^{n}\sum_{j=1}^{n}\left|x_i - x_j\right|}{2n^2\mu} \quad * \quad (n / n\text{-}1)$$

Where x_i and x_j are the average years of schooling of n consecutive quintiles of the distribution (so n = 5) and μ is 1/n. The quintile distribution is also used by Castello and Domenech (2002), whereas Thomas et al. (2001) use a septile distribution. The Gini-coefficient ranges from a minimum value of zero, when all quintiles have attained an equal proportion of the total years of schooling of the labour force, to a theoretical maximum of one, if the top quintile has received all education and the rest none. The standard deviation (σ) of the attainment distribution is defined as,

$$\sigma = \sqrt{\frac{1}{n}\sum_{i=1}^{n}(x_i - \bar{x})^2}$$

where n = 5. The secondary school completion share (SSCS) is defined as,

$$SSCS = \sum_{i=1}^{n} \frac{x_i^{ssc}}{x_i}$$

Where n is the total amount of people in the labour force and x_i^{ssc} refers to the share that has completed secondary schooling as the highest level attained.

Table 4.2 shows that according to the Gini-coefficient average educational inequality in 21 LAC's is at par with the world average. It is lower than in Asia, Sub Saharan Africa and the Middle East and higher than in Europe and the Western Offshoots and the Transition Economies. However, the standard deviation places Latin America substantially above world average and suggests that educational inequality in the region is higher than in Asia and considerably higher than in Sub Saharan Africa. Finally, according to the share of the labour

force that has completed secondary schooling, Latin America (8.2%) is far below Asia and the world average of 12.3%, though much higher than in Sub Saharan Africa.[54]

Table 4.2: A regional comparison of educational inequality by three different indicators, unweighted averages, 2000

	No. of countries	Gini-coefficient attainment	% completed secondary schooling	Standard deviation attainment
Latin America	21	0.55	8.5	5.0
Asia	17	0.58	13.7	4.6
Sub Saharan Africa	23	0.73	4.0	3.7
North Africa and Middle East	10	0.63	13.0	5.6
Transition Economies	9	0.31	18.3	4.2
Europe and Western Offshoots	20	0.32	21.7	4.6
World	100	0.54	12.3	4.50

Sources: Authors own calculations based on Barro and Lee (2001).
Note: Countries included are Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay, Venezuela (Latin America); Afghanistan, Bangladesh, China, Hong Kong, India, Indonesia, Japan, Korea rep., Malaysia, Myanmar, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Taiwan, Thailand (Asia); Botswana, Cameroon, CAR, Congo Dem. Rep., Congo Rep., The Gambia, Ghana, Kenya, Lesotho, Liberia, Malawi, Mali, Mozambique, Niger, Rwanda, Senegal, Sierra Leone, South Africa, Swaziland, Togo, Uganda, Zambia, Zimbabwe (Sub Saharan Africa); Algeria, Egypt, Arab. Rep., Iran, Iraq, Israel, Jordan, Kuwait, Syria, Tunisia Turkey (North Africa & Middle East); Bulgaria, Croatia, Czech Rep., Estonia, Hungary, Poland, Romania, Slovakia, Slovenia (European Transition Economies); Belgium, Canada, Cyprus, Denmark, Finland, France, Greece, Ireland, Italy, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, UK, USA (Europe and New World).

Why the Gini-coefficient does not capture what we think it does

To see why these indicators provide such a different view on the comparative extent of educational inequality in Latin America (as a region) we analyse the three indicators in some more detail focusing on a temporal comparison between 21 Latin American and 8 East Asian countries as presented in table 4.3. The table shows that the Latin American Gini was significantly lower in the early post-war era, that it declined substantially in both regions and

[54] The interpretation of educational inequality in Sub Saharan Africa runs into even larger trouble: according to the Gini-coefficient African countries obtain the highest levels of educational inequality, while the standard deviation suggests they obtain the most egalitarian levels in the world. The standard deviation reflects an "absolute" rather than a "relative" spread in years of schooling. Ram's (1990) analysis, based on educational attainment data of 100 countries decomposed into 6 categories of attainment derived from Psacharopoulos and Arriagada (1986), suggests that educational inequality is subject to an inverted U-curve identical to the Kuznets curve: increasing educational investments first enhance educational inequality and after a turning point at approximately 7 years of attainment convergence sets in.[54] Ram does not particularly assess the case of Latin America, but the main conclusion of his empirical analysis is that there is no relation between educational inequality and income inequality.

that this decline has been larger in East Asia than in Latin America. Hence, present levels of educational inequality, as expressed by the Gini-coeffcient of the attainment distribution, are significantly higher in Latin America than East Asia, but previous levels were not.

This interpretation is problematic. The Gini-coefficient captures the "relative variation" in years of attainment, a concept which is extremely sensitive to differences in "average levels" of education.[55] Especially if the distribution contains a share of the labour force with zero to one year of schooling, the Gini tends to become an almost perfect substitute for primary school enrolment rates. The correlation coefficient of the Gini and the percentage share of the working age population without schooling is -0.95. Appendix figure A.4.5 presents a scatter plot of this correlation for 1846 observations in the Barro and Lee dataset. It shows that the relation is not only extremely tight, but is also subject to heteroskedasticity. When we remove the category of "no schooling" from the distribution and re-estimate the Gini, the indicator will remain highly sensitive to levels of attainment in the lower quintiles.

Table 4.3: Regional averages of the Gini-coefficient, standard deviation and coefficient of variation, Latin America (21 countries) versus East Asia (8 countries), 1950-2000

	1950	1960	1970	1980	1990	2000
			Gini-coefficient			
Latin America	0.71*	0.67	0.64	0.60	0.57	0.55
East Asia		0.77	0.67	0.56	0.51	0.43
			Standard Deviation			
Latin America	2.72*	3.24	3.47	4.09	4.66	4.98
East Asia		4.03	4.33	4.53	4.92	5.11
			Coefficient of Variation			
Latin America	1.27*	1.17	1.14	1.04	0.97	0.91
East Asia		1.36	1.13	0.93	0.84	0.69

Source: Authors own calculations based on Barro and Lee 2001.
Notes: Countries included are Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay, Venezuela (Latin America); Hong Kong, Indonesia, Korea rep., Malaysia, Philippines, Singapore, Taiwan, Thailand (Asia); * Excluding Bolivia, Brazil, Cuba, Dominican Rep., Honduras, Jamaica, Peru and Uruguay. The underlying data are presented in appendix table A.4.4 and A.4.6.

Given the "level-dependency" of the Gini-coefficient of educational distribution, the 1960 and 1970 figures reflect the fact that primary school enrolment rates were higher in Latin America than in East Asia (see section 3). The East Asian Gini decreased much faster because its

[55] The relative difference between 0.5 years of schooling and 1 year of schooling is the same relative difference between 5 years and 10 years of schooling. Their absolute differences are 0.5 and 5 years of schooling respectively. This problem also occurs with income Gini's, but these generally suffer less from this bias since there is always a substantial amount of income in the bottom brackets of the income distribution (see Atkinson 1983: pp. 53-6 or Sen 1997: pp. 29-31). With an alternative comprehensive measure of educational inequality such as the Theil coefficient one encounters the same problem.

average years of attainment rapidly overtook those in Latin America after accomplishing full primary school enrolment rates, while some LAC's (i.e. El Salvador, Haiti, Guatemala, Nicaragua, Bolivia) stayed behind. In sum, the Gini tells us as much about the average attainment levels as about the extent of variation around this average.

Contrary to the Gini, the standard deviation focuses exclusively on the absolute variation in attainment years around the average. With a standard deviation of around 5 years of schooling there is hardly any difference between both regions in the year 2000. Yet, only the coefficient of variation, which divides the standard deviation by its mean, makes the amount of variation between populations with different means comparable. The coefficient of variation shows that, controlled for the differences in the mean of the two regions, the variation appears to be considerably higher in Latin America in 2000.

This has not always been the case. In the 1960's the coefficient of variation in East Asia was higher than in Latin America, but since then it declined much faster which indicates that the process of educational expansion in East Asia has been more dynamic. Here it should be pointed out again that it is useful to distinguish between comparative *levels* of educational inequality, which presumably peaked at a higher level in East Asia (at 1.36 in 1960), and the comparative *pace* of convergence in the attainment distribution. Although Latin America, as a region, did not reach a coefficient of variation as high as 1.36, it did take much longer before all children attained a reasonable amount of schooling years. Hence, a relatively large variation in attainment persisted much longer.

This conclusion may be flawed because of larger intra-regional variation underlying the Latin American average. Appendix table A.4.6 therefore also presents the rate of change in both indicators between 1960 and 2000 for each individual country in the sample. These figures show that only Haiti has witnessed a decline in its coefficient of variation that is close to the average East Asian country. This is not surprising in the light of the extremely high initial level of Haiti in 1960. All other LAC's recorded a considerably slower pace of decline. Controlling for the initial levels one may compare Peru and Venezuela with Taiwan, or Nicaragua with South Korea and Singapore. Thailand appears to be an East Asian country with a rather "Latin American" outlook.

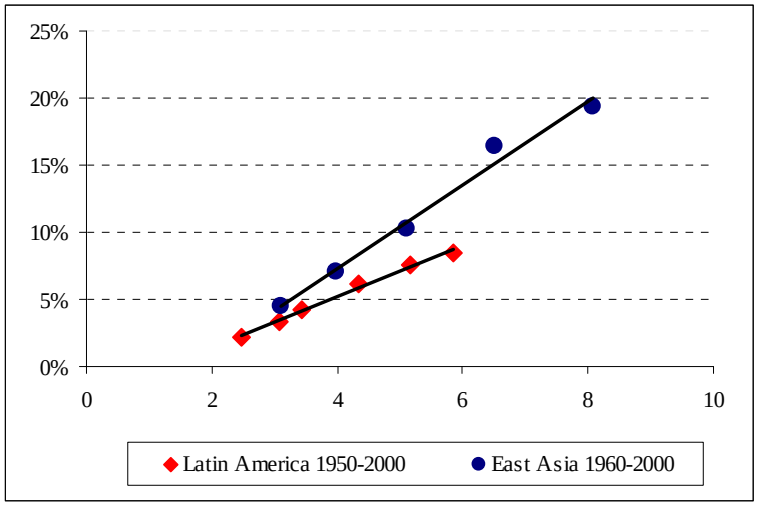
Secondary School Completion rates

Secondary school completion shares of the attainment distribution give an indication of the size of the educational "middle class". The inference is that the larger this share, the lower the level of educational inequality. This interpretation, again, only makes sense controlled for the level of educational accumulation. It is possible to have a low percentage share of secondary school completion and a perfectly egalitarian distribution, when all individuals in the

population have completed primary school but did not extend their educational career. Figure 4.3 shows secondary school completion shares controlled for the average years of schooling in Latin America and East Asia. As noted above, the accumulation of schooling years was more rapid in East Asia than in Latin America. However, controlled for average attainment levels, the secondary school completion share was substantially higher in East Asia as well.

In sum, the "mean controlled" coefficient of variation and the secondary school completion share confirm that the traces of educational underdevelopment as revealed in section 4.3 are still present in the Latin American labour force of the early 21st century. Both indicators show that the process of convergence of individual attainment levels has been much slower in Latin America than in East Asia. It should be emphasized that recent changes in the distribution of education, that is changes in the flow rather than the stock variables, have only marginally affected the attainment data of the year 2000 (which after all reflects the working age population from 25 to 64). Hence, it is too early to conclude that the negative distributional consequences of educational expansion still prevail. In fact, the grade enrolment distribution approach in the next section raises some support for the view that LAC's have started to break away from their historical legacy of educational inequality in the last two decades of the 20th century.

Figure 4.3: Secondary school completion shares (y-axis) versus average years of schooling attained, Latin America versus East Asia, 1950-2000



Source: Figures are retrieved from the dataset of Barro and Lee 2001.

4.5 A grade enrolment distribution approach, 1960-2005

This section introduces a new indicator of educational inequality which focuses on levels of grade repetition and drop out rates in primary and secondary schooling. The methodology has been developed in papers by Frankema and Bolt (2006) and Frankema (2008). The core idea of this approach is that the percentage distribution of grade enrolment rates in primary and secondary schooling contains information on grade repetition rates and pre-completion drop out rates. The grade enrolment distribution thus provides insight in the effectiveness of educational systems with respect to extorting regular school attendance and supporting children in the process of grade promotion towards school completion. Since the data on grade enrolment rates offer a much larger amount of detail than the "standard" gross or net school enrolment rates, changes in the distribution of education can be analysed at a more detailed level.

The percentage distribution of grade enrolment in primary and secondary schooling can be obtained from UNESCO's *Yearbook of Statistics* for five-year intervals from 1950 onwards.[56] The grade distributions of primary and secondary schooling can be linked together using the absolute number of pupils enrolled in both levels of schooling and weighing their respective percentage distributions according to the following formulas,

$$\frac{X_p}{X_p + X_s} * g_{pi} \quad , \quad \frac{X_s}{X_p + X_s} * g_{si}$$

Where X_p and X_s refer to the total number of students enrolled in, respectively, primary and secondary schools and g_{pi} and g_{si} refer to the percentage share of students enrolled in the *i*th grade of primary and secondary school.[57]

Depending on the total amount of grades in primary and secondary education a standardised distribution can be obtained for ten to twelve grades for 92 (former) developing countries and 32 OECD countries from 1960 onwards. Table 4.4 presents two examples of this standardised grade enrolment distribution in Argentina and Canada for the year 1960. In the hypothetical scenario that each grade contains exactly the same amount of students, all twelve grades would contain 100/12 = 8,33%. In practice, the grade distribution is always skewed towards the lower grades because some children leave school earlier than others. Most OECD countries reveal a pattern comparable to Canada's, where the percentage shares

[56] From 1999 onwards the data are accessible online (UNESCO *Institute for Statistics* (UIS)).
[57] In some countries there is an overlap in the final grades of primary and the first grades of secondary schooling that requires extra calculations to link the series adequately. Generally the students in the "intermediate" grades were added to the first grades in secondary education.

decline more rapidly only in the final grades (9 to 12). At this point some children have (already) completed their secondary school. Developing countries reveal patterns that are more comparable to Argentina in 1960, or even far more skewed. Assuming, for the moment (we will discuss the validity of this assumption and possible solutions further below), that the influx of children in the system is constant, a considerable amount of children either repeats one or several of the lower grades for one or more years, or drops out before reaching the higher grades, or both.

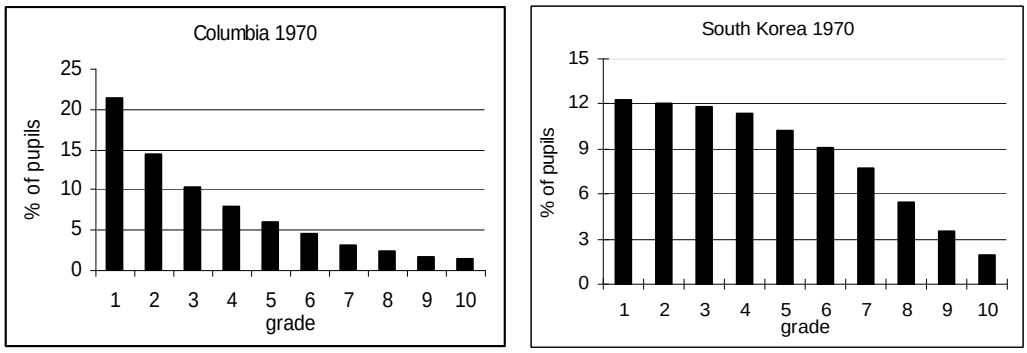
The weak record of Latin America regarding grade promotion and school completion has been widely acknowledged in literature (see for instance Schiefelbein 1992, Martin 1994, Birdsall et al. 1997). Figure 4.4 illustrates this "stylized fact" by picturing the grade enrolment distribution in Colombia and South Korea in 1970. It should be noted that in Colombia the reported gross enrolment rate in 1970 is 102% and in South Korea 104% (UNESCO, *Statistical Yearbook 1974*). In other words, practically all children attend primary education in both countries. Nevertheless, the grade enrolment distribution in Colombia reveals an enormous contrast compared to South Korea.

Table 4.4: The percentage distribution of grade enrolment in Argentina and Canada in 1960 (12 consecutive grades in primary and secondary schooling)

Grade	1	2	3	4	5	6	7	8	9	10	11	12
Argentina	21.3	14.0	13.8	12.0	10.2	8.7	7.2	4.2	2.9	2.4	1.8	1.4
Canada	11.9	11.1	10.8	10.3	10.0	9.7	9.3	8.4	7.1	5.1	3.8	2.4

Source: UNESCO, *Statistical Yearbook 1972*, authors own calculations.

Figure 4.4: Percentage distribution of grade enrolment in Colombia and South Korea, 1970



Source: UNESCO, Statistical Yearbook 1972 and 1978-1979 (authors own calculations).
Notes: three year moving average of twelve consecutive grades in primary and secondary schooling.

In Colombia high rates of grade repetition and pre-completion drop out rates skewed the grade enrolment distribution towards the lower grades. Only a small group of children completed primary schooling and enrolled in secondary schooling. Those who did had a relatively large chance of completing secondary school compared to children in primary school. On the other hand, Korean children were more evenly distributed among the first six grades of primary schooling, while the grade distribution in secondary schooling was more skewed. This simple comparison not only exemplifies the Latin American context of educational expansion, it also shows the large limitations of gross enrolment rates for comparative purposes.

Tentative explanations for grade repetition and pre-completion drop out

Irregular school attendance goes a long way in explaining the phenomena of grade repetition and pre-completion drop out. Children can be officially enrolled (i.e. registered) without attending in practice. Absenteeism has multiple causes that are more often than not related to poverty: a lack of finances to cover school expenses, a lack of school transportation and prohibitive distances to schools in rural areas, overcrowding of schools, health problems of the child (undernourishment), child labour, a lack of perceived interest of schooling by parents, a lack of support and attention by teachers, insufficient monitoring on attendance and performance, and so on and so forth.

The problems of absenteeism and irregular school attendance have been recognized for a long time in Latin America. In the 1956 report for the Brazilian Institute for Education, Science and Culture, composed by J.R. Moreira, it is shown that 53.1% of all Brazilian pupils are enrolled in the first grade, 21.8% in the second, 15.5% in the third and 9.7% in the final fourth grade. Moreover, 42.7% of the children leave school without ever passing the first grade and over 70% leaves school before completing four years of education. Out of the other 30% the majority of pupils spent five, six or seven years to finish four grades. The report states that,

"In a country which is obviously poor in spite of its present extraordinary industrial development, we fix something which is capable of change and revision, and keep the child in one primary grade for two, three or more years or even turn him out of school before he has learnt the least it can give him." (UNESCO 1958, *World Survey of Education II*, p. 172)

And with respect to the poor regions in the North East of Brazil the report states,

"…retardation in the primary schools reaches alarming proportions, expanding and enlarging the school age band, multiplying the first grades, crowding the classroom, and dividing the school periods into two, three, or even four sessions because there are not enough funds to build more schools." (UNESCO 1958, *World Survey of Education II*, p. 172)

Framing the grade enrolment distribution into a comprehensive indicator

The distributive information contained in grade enrolment rates can be standardized for broader comparative purposes by estimating the likelihood that children entering school will have a smooth school-career up to completion of either primary or secondary schooling. A possible method is to take the ratio of the percentage share of students in grade 1 to the shares in grade 6, 9 or 12. The disadvantage of this approach is that such a comparison is sensitive to year-to-year fluctuations that occasionally occur in school enrolment. An alternative method is to average out these fluctuations by taking a weighted measure of students enrolled in more than one grade. This will also reveal a larger part of the underlying structure of the distribution. Any ratio of grade enrolment rates is feasible once we normalise the equation for the number of grades involved as follows,

$$\text{GDR 1-N} = \frac{\sum_{i=(n+1),N} g_i}{\sum_{i=1,n} g_i} * \frac{n}{N-n}$$

Where N is the total number of grades and g_i is the percentage share of enrolled in the *i*th grade. Since the majority of countries have adopted a six grade elementary curriculum a measure including the first six grades gives the best fit to standardize the inequality indicator for primary schools. Assuming that the influx of pupils is constant over time, the ratio of the grades 4 to 6 over 1 to 3 expresses the chance that a pupil in grades 1 to 3 reaches the higher grades 4 to 6 without repeating grades or dropping out. The GDR 1-6 is defined as,

$$\text{GDR 1-6} = \frac{\sum_{i=4-6} g_i}{\sum_{i=1-3} g_i}$$

So far, the implicit assumption has been made that the influx of pupils is constant over time. A growing (or declining) school-age population skews the grade enrolment distribution, if it implies that each year more children enroll than in the previous year, other things equal. The

countries under consideration here almost all witnessed rapid increases in their school-age populations (the 5 to 14 year old category) over the period 1960-2005. Demographic growth generally explains the bulk, between 75 and 100%, of year to year fluctuations in total enrolment. What are the potential effects on the GDR created by the demographic factor?

The demographic database of the UN provides population figures for the age group 5 to 14 from 1950 onwards (five year intervals, see UN *World Population Prospects 2004*)). For three regions and a group of least developed countries the average annual growth rates has been calculated for each decade. Table 4.5 shows the average annual growth rates for the entire period 1960-2005 in Africa, Asia, Latin America and the least developed countries. To estimate the maximum possible impact of demographic change on the GDR 1-6, we also included Latin America in the decade 1955 to 1965 in the last row: the annual increase of the Latin American age cohort 5-14 at a rate of 3.4% was the highest being encountered.

Table 4.5: The effects of population growth on the grade distribution, annual growth of age group 5-14, 1960-2005

	Annual growth (age 5-14)	grade distribution							
	1960-2005	1	2	3	4	5	6	GDR 1-6	Distortion
Africa	0.026	11.4	11.1	10.8	10.5	10.3	10.0	0.926	0.074
Asia	0.013	10.7	10.5	10.4	10.3	10.1	10.0	0.962	0.038
Latin America	0.015	10.8	10.6	10.5	10.3	10.2	10.0	0.955	0.045
least developed countries	0.026	11.3	11.1	10.8	10.5	10.3	10.0	0.927	0.073
Latin America (1955-1965)	0.034	11.8	11.4	11.1	10.7	10.3	10.0	0.905	0.095

Sources: Annual population growth figures taken from UN, *Population Prospects 2004*, medium variant.

The outcome of this exercise is that, in the extreme case scenario, demographic growth can distort the GDR by almost 0.10, *ceteris paribus*, and in some individual cases even slightly more.[58] This potential spatial and temporal bias in the comparison of GDR's warrants correction. Fortunately, the demographic data, i.e. the average annual decadal growth rates of the age cohort 5-14, required for adjusting the original GDR are readily available. So we obtain the *adjusted* GDR by:

$$\textit{adjusted}\ \text{GDR}_{xi} = \textit{original}\ \text{GDR}_{xi} + \textit{correction}_{xi} \qquad [4.1]$$

[58] Given the variation around the Latin American mean (1955-1965). In many OECD countries the effect of declining birth rates results in a positive, albeit less substantial, bias.

where *x* refers to the country and *i* to the year of observation. To account for the time-lag involved in the effect of changes in the influx of students on the GDR 1-6, the annual decadal growth rates were taken ca. five years in advance of the observation (depending on the exact year of observation of the original GDR). For example, the observation for South Korea in 1963 and Guatemala in 1961 are both adjusted for the average annual growth rate of the age cohort 5-14 over the years 1955-1964.

Latin American grade enrolment ratios in international comparative perspective, 1960-2005

Table 4.6 shows the estimates of the grade distribution ratio (GDR 1-6) in the period 1960-2005 for five developing regions in the world. The first line of each region presents the unadjusted and unweighted estimates, the second line presents the same estimates, but weighted according to the total number of students enrolled per country and the third line presents the weighted and adjusted averages of the GDR 1-6. The underlying data, i.e. the unadjusted and unweighted estimates, are presented in appendix table A.4.7. The GDR's increased around 0.22 to 0.26 between 1960 and 2000 in four of the five regions, but not in Latin America. In the latter region the increase in the GDR between 1960 and 2000 was 0.42. It should be noted however that the initial levels of the Latin American GDR in the 1960's were staggering low. In other words, the quality of the educational systems that have been erected during the 20th century in LAC's, at least in terms of grade promotion and school completion, was far below the general standard. Part of the rapid increase in the GDR, therefore, has to be interpreted as a form of "catching-up" convergence.

Table 4.6: Interregional comparison of grade distribution ratios (1-6), weighted and adjusted averages, 1960-2005

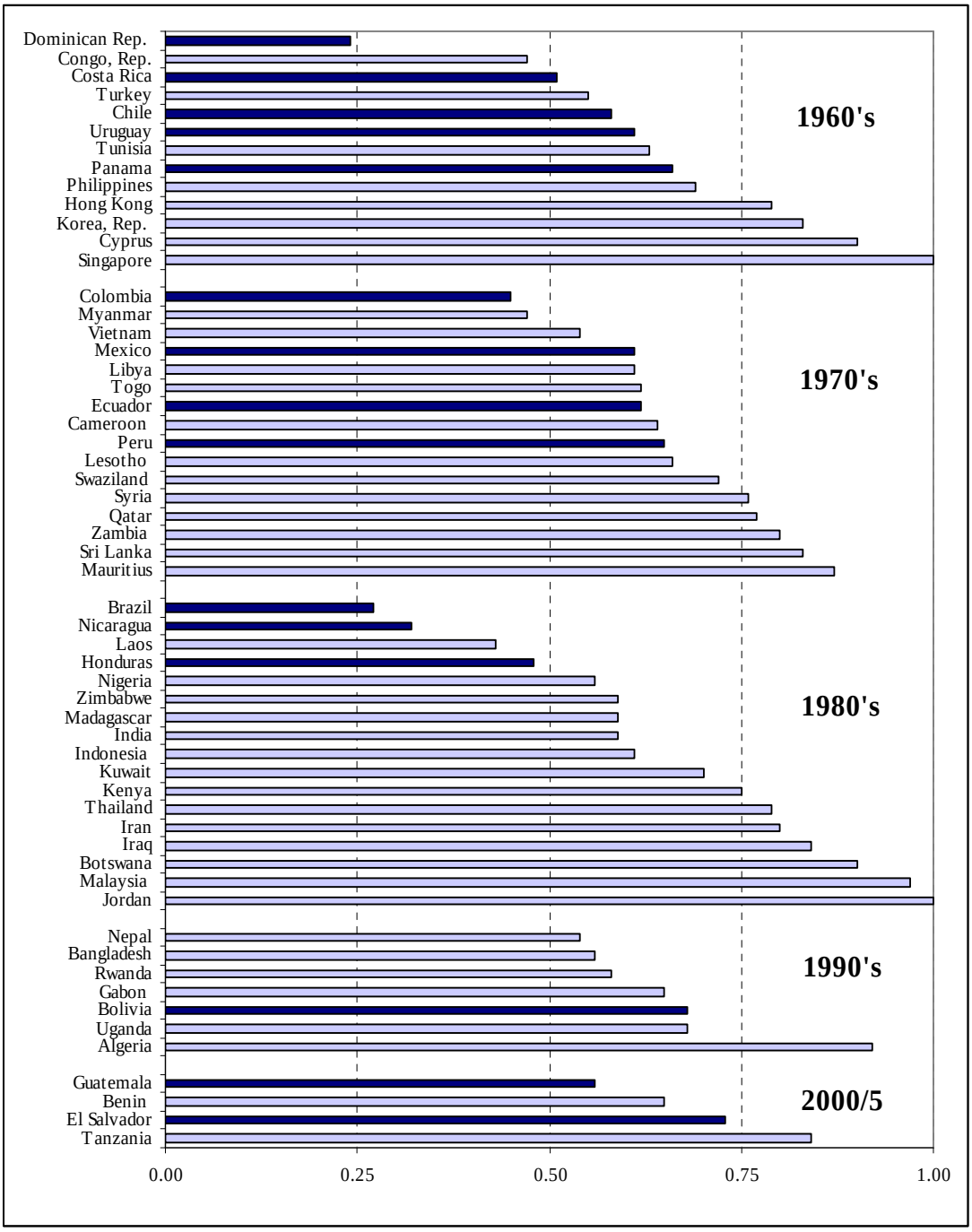
	1960/5	1970/5	1980/5	1990/5	2000/5
Latin America (19)	0.42	0.57	0.64	0.68	0.84
South & West Asia (5)	0.50	0.57	0.58	0.73	0.74
East Asia & Pacific (7)	0.63	0.72	0.72	0.93	0.87
Sub Saharan Africa (19)	0.59	0.68	0.79	0.80	0.75
North Africa & Middle East (10)	0.66	0.79	0.81	0.90	0.88

Source: Frankema 2008, UNESCO, *Statistical Yearbook*, various issues 1962-1998 and UNESCO, Institute for Statistics, www.uis.unesco.org; Notes: Countries included are Argentina, Bolivia, Brazil, Colombia, Costa Rica, Chile, Cuba, Ecuador, El Salvador, Guyana, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Trinidad & Tobago, Uruguay, Venezuela (Latin America); Afghanistan, Bahrain, Bangladesh, India and Iran (South & West Asia); Hong Kong, Indonesia, South Korea, Laos, Malaysia, Philippines, Thailand (East Asia & Pacific); Botswana, Burkina Faso, Congo Rep., Ethiopia, Gabon, The Gambia, Ghana, Ivory Coast, Kenya, Lesotho, Madagascar, Mauritania, Mauritius, Niger, Nigeria, Rwanda, Senegal, Uganda, Zambia (Sub Saharan Africa); Iraq, Israel, Jordan, Kuwait, Morocco, Qatar, Saudi Arabia, Syria, Tunisia, Turkey (North Africa & Middle East).

There is more evidence supporting this conclusion. Figure 4.5 shows 57 countries that have achieved full primary enrolment (defined as 95% or above) in the period 1960-2005 and the adjusted GDR's 1-6 in the first half of that particular decade. In particular LAC's turn out to have combined full enrolment rates with very low GDR's. For instance, in 1980, Jordan achieved full gross enrolment rates and complete grade enrolment equalization in the same decade, whereas Brazil and Nicaragua achieved full gross enrolment rates with an adjusted GDR of only 0.27 and 0.32 respectively. Or compare Chile in the 1960's with South Korea or Singapore, or Colombia in the 1970's with Zambia, Sri Lanka and Mauritius. All LAC's obtained a GDR below 0.75 when achieving full enrolment. The expansion of primary education in Latin America took place at the expense of the quality of the educational system and this was a widely shared feature among all LAC's.

Focusing on the time lag between the achievement of full primary school enrolment rates and the GDR passing 0.95 we find striking global differences. In Malaysia, Singapore and Jordan there was no time lag whatsoever, which means that the development of the educational system not only guaranteed enrolment for all children, but also effectively organized the system of grade promotion and prevented children to drop out of school before completion at the same time. South Korea, Cyprus and Mauritius witnessed a one decade time-lag between reaching both goals. However, after complete primary school enrolment in the early post-war era it took Argentina five decades and Chile four decades to accomplish grade enrolment distribution equalisation. Panama and Uruguay are currently approaching a five decade lag. Hence, the Latin American strategy of educational development can be characterised as "*enrolment over completion*".

Figure 4.5: Grade Distribution Ratio (1-6) in the first decade of full primary school enrolment, 1960-2005



Source: UNESCO, *Statistical Yearbook*, various issues 1966-1999 and UNESCO, *Institute for Statistics* (UIS), www.uis.unseco.org. GDR's from Frankema 2008.

Changes in the shapes and slopes of the grade enrolment distribution

Turning back to table 4.6 another stylized fact of Latin American educational development demands our attention: in the four benchmark regions the GDR's increased around 0.22 to 0.26 between 1960 and 2000. Yet, in Latin America the increase in the GDR was 0.42. Part of the rapid increase in the GDR has to be interpreted as a form of "catching-up" convergence, but it does indicate that improvements in the quality of the educational system were made at an accelerated pace. In the four benchmark regions the rise of the GDR has recently come to a halt.[59] In East Asia there has been a significant set back and in Sub Saharan Africa the stagnation has set in already in the 1980's. Latin America forms an exception. The region witnessed a temporary slow down during the 1980's, which has been more than compensated for during the 1990's. This implies that current generations of young workers entering the labour force have received their education in a system that was markedly more equal and, presumably, offered a higher level of educational quality, than that of their parents. In a more detailed analysis of the shapes and slopes of the entire grade distribution this conclusion can be confirmed.

Figure 4.6 presents the grade distribution curves of twelve countries (Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela, and Kenya, Egypt, India, South Korea and Malaysia) in 1960 and 2000 (1990 for Brazil and India). The charts include an estimation of the gradient of the grade distribution curve. The inference is that steeper downward slopes (i.e. lower coefficients) represent a more skewed grade distribution and higher levels of educational inequality. The coefficients are reported in the upper right hand corner of each graph for 1960 and 2000 (or 1990).

There appears to be a great similarity in the shape of Latin American curves around 1960. Convex curves indicate that the grade distribution is highly skewed towards the lower grades and tend to get flatter in secondary education. Argentina is the single exception to this pattern in 1960. The majority of benchmark countries reveal an inverted S shape curve indicating a larger relative emphasis on, or a larger relative success in, supporting children on the path towards primary school completion. Only the curve of India resembles those of the LAC's, albeit with a less pronounced convexity.

The inverted S-shape in Egypt and Kenya has largely remained the same, while the distribution as a whole has become more equal. Chile reveals a shift away from convexity

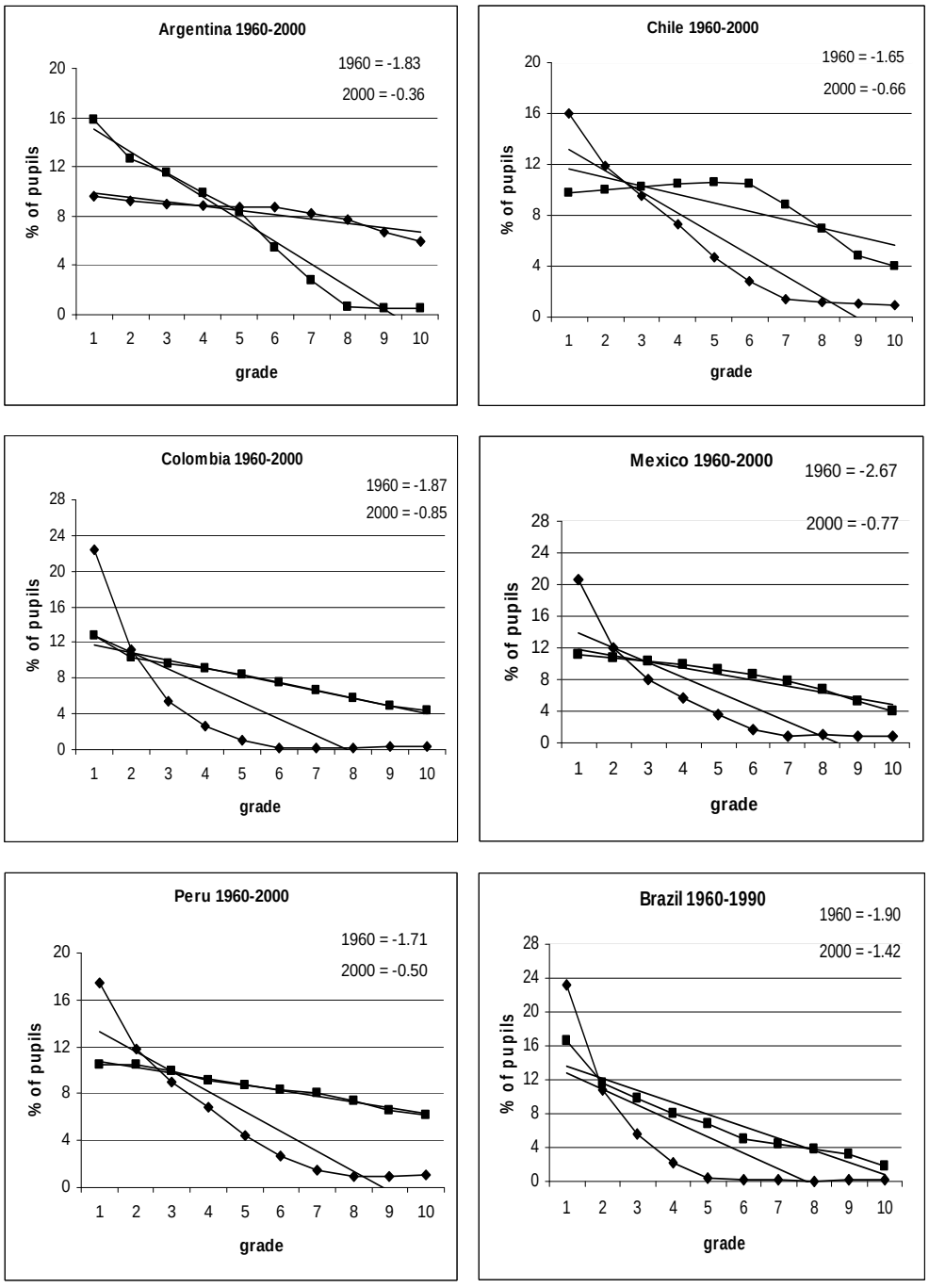
[59] The recent stagnation can be explained by two factors. First, there has been a setback in some countries affecting the regional means (Afghanistan, Indonesia, Iraq). Second, a more widespread slowdown signals decreasing marginal returns on efforts to equalize the grade distribution by means of supporting school attendance and preventing pre-completion drop-out rates, or it signals a reduced effort as such. In Sub Saharan Africa the effects of the growth disaster and continuous political instability since the 1980's are the most likely explanation for the observed stagnation.

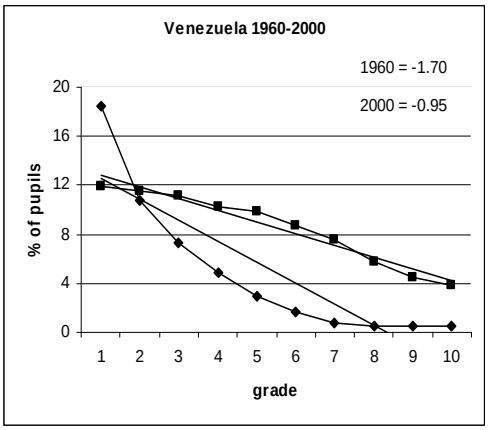
towards an inverted S. The other LAC's seem to have followed the pattern best exemplified by Peru: the convex curve gradually transforms towards linearity, indicating that there is still a large bias in the grade distribution towards the lowest grades, yet this bias has become considerably less pronounced in the four decades before 2000. Finally, in South Korea and Malaysia the original inverted S curve has now approached the horizontal line that indicates a perfectly equal distribution of grade enrolments across primary and secondary schooling.

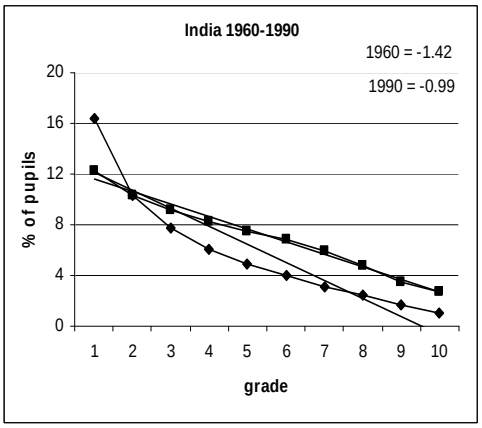
Judged by the changes in the slope of the curve, progress in five of the seven Latin countries can be considered above average. Argentina, Chile, Colombia, Mexico and Peru all have witnessed a sharp drop in the coefficient. Mexico stands out with a spectacular drop from -2.67 to -0.77, but also Argentina and Peru have made respectable progress from -1.83 to -.036 and -1.71 to -0.50 respectively. Compared to for example South Korea (-1.30 to -0.53) the progress can be considered as complete "catching up", although it should be noted that Malaysia (-1.60 to -0.17) outperformed all LAC's except Mexico. Venezuela has lagged behind somewhat and progress in Brazil has been rather poor (even taking into account the end year 1990).

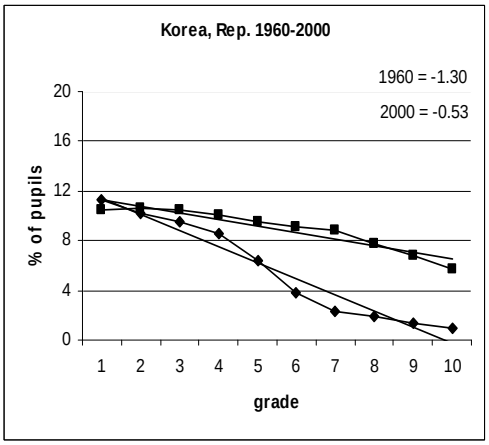
The comparative grade enrolment distribution analysis has shown that the expansion of primary school enrolment rates in 20th century Latin America has, to a large extent, taken place at the expense of the quality of the educational systems. Levels of grade promotion and school completion were, controlled for gross enrolment rates, very low compared to other developing regions in the early post war period. The efforts to repair these shortcomings have increased during the post-war period. In particular during the 1990's progress in grade enrolment equalization was outstanding. This result creates some leeway for the conclusion that at present LAC's are rapidly breaking away from a long period of educational inequality instilled by the neglect of quality maintenance during previous stages of spreading mass public schooling. Yet, it is too early to witness the effects of grade distribution equalization trickling down in the labour force.

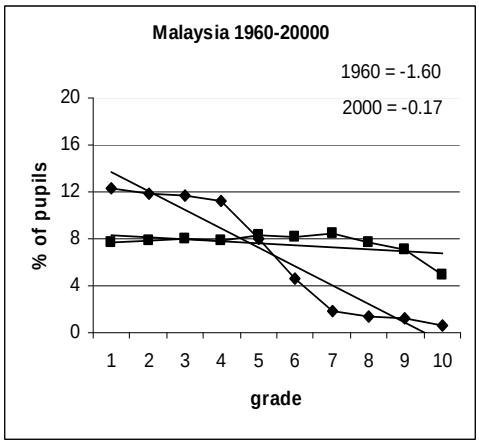
Figure 4.6: The grade enrolment distribution in primary and secondary schooling, Latin America versus a selection of non Latin American countries, 1960-2000

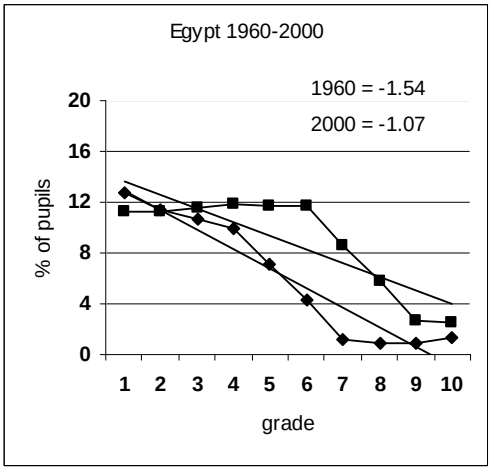


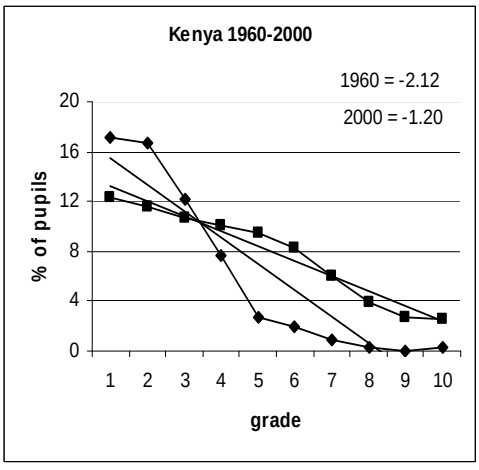








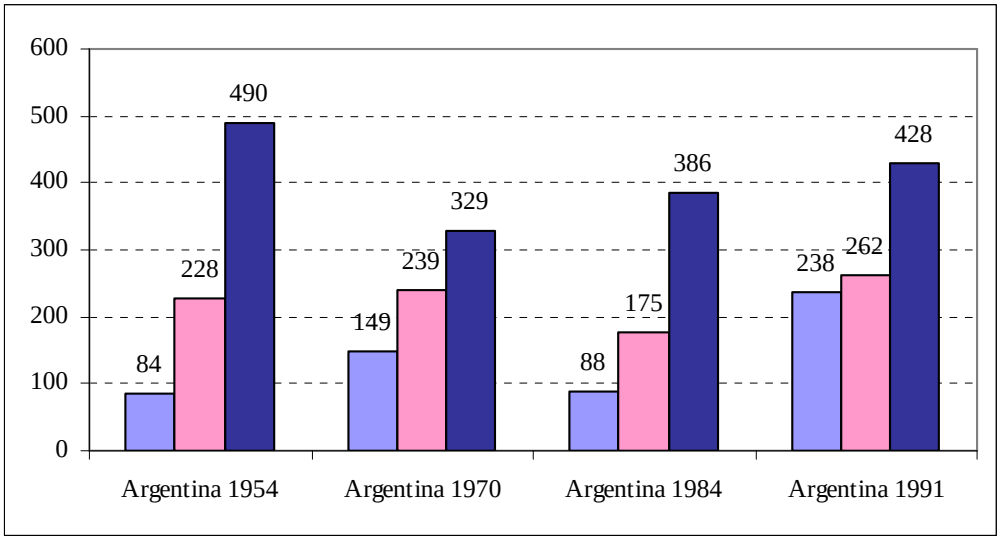


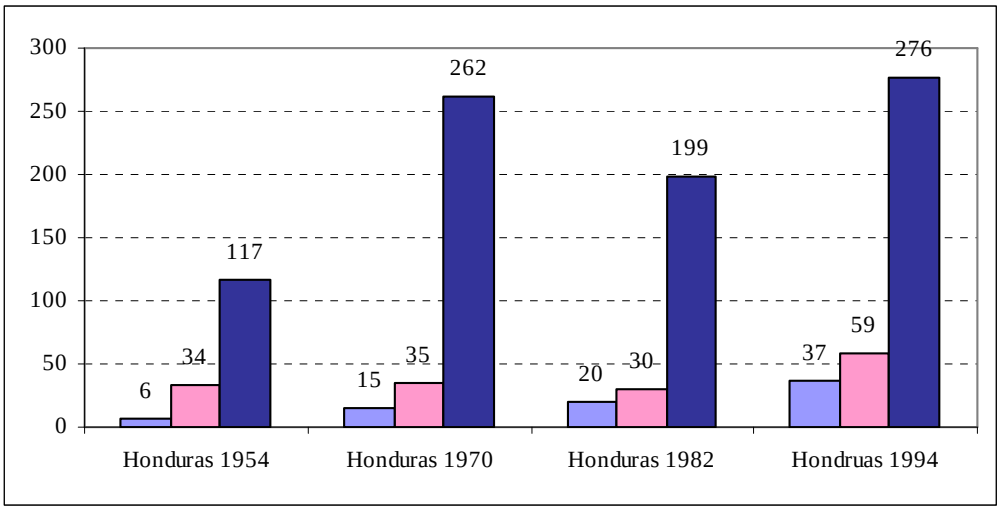


Source: UNESCO, *Statistical Yearbook*, various issues. See also appendix table A.4.6 (authors own calculations).

The conclusion that Latin America is breaking with a history of educational inequality may be true for some, but certainly not for all LAC's. To illustrative this point figure 4.7 shows the absolute amounts of public spending per level per student in Argentina and Honduras for four benchmark years between 1950 and 2000. Maddison's GDP estimates denoted in 1990 Geary-Khamis US dollars were used to convert the percentage share of public educational expenditure in total GDP into a PPP-adjusted monetary unit (Maddison 2003). Argentina has reached ratios of public spending per student per level, which are largely comparable to the majority of OECD countries. In Honduras the ratio of tertiary to primary spending per student has also been declining since 1954, but absolute public expenses on children in primary education were extremely low initially. In 1994 public spending per tertiary student was approximately six times as large, whereas in 1954 this ratio reached nearly twenty. Although the relative gap has been narrowed, the absolute gap in spending per student per level has only further increased, from 111 to 239 GK-dollars, which means that a large share of the extra money available today is spend on tertiary students rather than on children in primary or secondary school.

Figure 4.7: Total public expenditure per student per level of education in Argentina and Honduras, 1954-1990 (1990 Geary-Khamis US $)





Source: Maddison 2003; UNESCO, *World Survey of Education*, 1958; UNESCO, *Statistical Yearbook*, various issues.

4.6 Conclusion

The present chapter has assessed the development and distribution of mass education in Latin America from 1870 to 2000 in an international comparative perspective. Special attention has been paid to the timing and pace of educational expansion and educational equalisation. Since the distribution of education is inextricably related to the spread of education, comparative levels of educational inequality (variation) were controlled for the stage of educational development (accumulation). Although the analysis has indicated a large extent of intra-regional variation in educational development throughout the late 19th century and 20th century, at least three shared Latin features of educational development and distribution can be recorded:

1) With respect to average levels of GDP per capita, the transition towards mass public schooling occurred later than in the rest of the New World, Europe and Japan. The start of three phases of expansion, each referring to a specific set of LAC's can be dated around ca. 1870, 1920 and 1950. Once underway, the increase in primary school enrolment was not any slower or faster than could be expected on the basis of the patterns observed in the rest of the world: it was faster than in the most advanced countries and it was notably slower than in the poorer developing countries.

2) More than in any other part of the world, the expansion of public primary education took place at the expense of the quality of education. It took even the advanced Southern cone countries at least four decades to achieve acceptable levels of grade promotion and school completion after having achieved full primary school enrolment rates. Correcting enrolment figures for the grade enrolment ratio thus revealed that educational development (and distribution) significantly lagged behind in Latin America from an international comparative perspective.

3) In the post-war era levels of educational inequality were gradually reduced. This process was partly hampered by the economic crises in the 1980's, but since the start of the 1990's Latin America broke away from its traditional path of educational retardation and its inherently high levels of educational inequality with more speed than witnessed before. The advances in the reduction of repetition and pre-completion drop out rates were larger than in other regions of the world. However, large gaps in years of attainment (and the quality of years attained) can still be observed in Latin America's labour force at present, as it takes time before the effects of these improvements trickle down.

These conclusions are based on an analysis of a wide range of educational indicators, which have not all shed similar lights on the comparative development of Latin American education. In particular the Gini-coefficient of the attainment distribution provided a much milder view on the extent of educational inequality in Latin America. The reason for this deviation from the more general picture is related to the "level-dependency" of this indicator. The advantage of the use of a wider range of partial indicators of educational inequality is that it offers various complementary insights into the distribution of education. The grade enrolment distribution can be considered a useful contribution to the existing set of indicators, since it nuances the analysis of historical gross primary school enrolment rates in two ways. First, it shows that enrolment registration differs from actual school attendance. Second, it helps to differentiate between years of attainment which are usually equally valued: not every registered year attained has been equally valuable for the student, when taking repetition rates or pre-completion drop out into account. Since grade enrolment data are available from the 1960's onwards, the GDR sheds new light on the historical comparative analysis of educational development and distribution.

The question why LAC's were so late in improving the quality of their public education systems has only been tentatively addressed in this chapter, but looking ahead to the second part of this study, it may be stressed once again that the initial conditions of inequality that had evolved in the colonial settler societies had a long lasting impact on the comparative

development and distribution of education in post-independent Latin America. As long as the colonial model of the stratified rural society, characterised by high land inequality and various forms of labour coercion prevailed, a broadly supported expansion of public education was unfeasible. Land lords needed cheap labour and children of the landed elite were better of with private education. Given the low prospects of social mobility in these pre-modern rural societies, the demand for popular education was also limited. Hence, fundamental changes in government policies regarding mass education largely depended on the decline of the traditional social order and the political stronghold of the landowning elite. Three factors played a key role in this process and these will be extensively discussed in the remainder of this thesis.

1) Structural economic change, primarily urbanisation and industrialisation, altered the demand for skilled labour and offered new job alternatives to the traditional rural population. Education became an increasingly valuable asset and a new class of urban entrepreneurs developed a vested interest in educational expansion.

2) Globalisation, apart from temporarily strengthening the position of the large landowners, enhanced structural and institutional change in the long run. The forces of the global market enforced policy makers to reconsider and reform traditional economic policies and it also induced the spread of new ideologies concerning the position of the poor and the labouring class.

3) Demographic change was the silent driving force of a dramatic change in the relative supply of unskilled labour in the course of the 20th century. Whereas the newly independent Latin American nation states started out with, on average, very low levels of population density, all of them were at the end of the 20th century characterised by an abundance of unskilled labour and large rates of underemployment. The traditional labour market institutions which were designed in response to chronic labour scarcity in the colonial era, became rapidly obsolete during the 20th century. Consequently, the perceived importance of education changed in the mind set of policy makers, entrepreneurs and the broader layers of society.

Part Two

In the second part of this thesis the focus shifts from asset inequality to income inequality. Chapters five, six and seven are devoted to the analysis of the secular trend of Latin American income inequality in the long twentieth century. The objective is to improve our insight in the changes in relative factor and sector earnings and their eventual impact on the level of personal income inequality. In order to overcome the large gaps in historical sources and handle the data intensity of the time-series involved, the number of countries included in the comparative analysis is mainly limited to a selection of larger LAC's, i.e. Argentina, Brazil, Chile, Colombia, Mexico, Peru, Uruguay and Venezuela, and three mirror countries, i.e. the USA, Canada and Australia. These three New World countries (NWC's henceforth) have several natural and historical conditions in common with the LAC's, such as a low population density, a natural resource rich endowment structure and a colonial legacy of permanent European settlement. Hence, this selection offers a fertile basis for a historical comparative analysis (Taylor 1992, Engerman and Sokoloff 1997, North et al. 2000, Williamson 2006).

The empirical analyses of chapters six and seven are conducted along the lines of the explanatory framework outlined in figure 1.3 (chapter one) and discussed in chapter five. Whereas the mainstream economic literature attempts to separate the effects of globalisation and structural change on distributional change, using ceteris paribus conditions or control variables in regressions, here these factors are reviewed primarily in conjunction, focusing on their mutual feedback mechanisms and the broader historical context in which they operate. Chapter six provides an empirical assessment of the secular trend of inequality focusing on the pre-war period 1870-1940. Chapter seven shifts the focus of the empirical investigation towards the more recent period (1940-2000). This chapter is particularly concerned with the explanation for the "recent rise" in income inequality in the last quarter of the 20th century.

Chapter 5

Theoretical and Historical Perspectives on the Secular Trend of Income Inequality in Latin America, 1870-2000

5.1 Introduction

The main premise of this thesis is that the *nature* of economic development, rather than the *rate* of economic growth, determines the secular trend of income inequality. The analysis of the relationship between the nature of economic development and distributional change requires a different approach than the straightforward regressions of growth on inequality (or vice versa) as conducted in many empirical economic studies focusing on the period since 1970.[60] An *integrative* approach emphasizes the interrelatedness of different driving forces of distributional change, in which mutual feedback mechanisms and endogenous institutional change form the centrepiece of the analysis.

This chapter evaluates various theoretical perspectives on long run distributional change. This evaluation is carried out along the lines of the integrative explanatory framework (see figure 1.3) and against the background of specific Latin American initial conditions and historical circumstances. The chapter respectively addresses: 1) the hypothetical effects of globalisation on distributional change, concentrating on a discussion of the predictions of the Hecksher-Ohlin-Samuelson model (section 5.2), 2) the hypothetical effects of structural and technological change on distributional change, focusing on the Kuznets' curve hypothesis and the theory of skill-biased technical change (section 5.3), and, 3) the hypothetical effects of institutional change on distributional change, especially focusing on the evolution of labour movements and changes in socio-economic policies from a collective action theory perspective (section 5.4).

The effects of these factors are mainly transmitted via the channels outlined in the functional income distribution scheme (see figure 1.4). These include: 1) changes in the sector

[60] Since the early 1990's the interest in the relationship between economic growth and inequality has been revived in the empirical economic literature (see for instance Persson and Tabellini 1994, Alesina and Rodrik 1994, or for a concise overview: Helpman 2004, Chapter 6, pp. 86-110). This strand of literature explores the relationship between growth and inequality using various types of regression analyses, including variables such as levels and growth rates of GDP and Gini-coefficients of income, expenditure or land holdings on a national level. Especially after the publication of a new dataset of income inequality figures (see Deininger and Squire 1996 and 1998) the number of empirical studies on growth and inequality soared. Papers by Barro (2000) and Forbes (2000) provide good examples of the use of controlled panel regressions to estimate the relationship between economic growth and income inequality.

structure of the economy, 2) changes in the relative factor shares in production, 3) changes in the relative remuneration between production factors and, 4) the redistribution of income via public authorities, which either runs directly via the system of taxation and public subsidies or indirectly via various types of formal institutional arrangements determining the access to, and functioning of, product and factor markets.

Figure 5.1 provides a stylized representation of the secular trend of interpersonal income inequality in an ideal-typical Latin American country. The graph conjectures an increase in inequality from the start of the Golden Age in 1870 until the First World War. During a transition period in the Interwar years the inequality trend is reversed and the downward sloping direction is continued until the 1970's, when a marked increase sets in. I will argue that all four channels outlined above play a role in the inequality trend presented in figure 5.1. These were especially paramount during the two major transition periods, when fundamental institutional changes took place in response to structural changes in the global and domestic economy as well as global and domestic political ideologies. The arguments for this periodisation are summarized in the conclusion (section 5.5).

Figure 5.1: A conjectured trend of income inequality in an ideal-type Latin American country, 1870-2000

5.2 The distributive consequences of globalisation and de-globalisation

"Globalisation" is narrowly defined here as the process of international product and factor market integration (O'Rourke and Williamson 1999). "De-globalisation" denotes the reverse. The impact of globalisation on the distribution of income runs via changes in the factor and

sector structure of the economy and is, therefore, inextricably linked to theories regarding the distributive consequences of structural change. Similarly, there is a mutual relationship with institutional changes, and specifically changes in socio-economic policies such as trade or labour market policies, which are often both a cause and a consequence of globalisation or de-globalisation.

In order to trace long run inequality trends in Latin America the globalisation perspective has received ample attention in economic historical literature (see for instance O'Rourke and Williamson 1999, Prados de la Escosura 2005, Bértola 2005, Bértola and Williamson 2006, Williamson 2006).[61] This is not surprising. The conjectures of the globalisation hypothesis are clear and appear to fit the historical circumstances in Latin America quite well. Empirical evidence also raises support for a globalisation perspective on distributional change. Yet, for the case of Latin America, there are also some major problems with the validity of the assumptions underlying the globalisation perspective.

The central departure point is the notion that open economies specialise according to their international comparative advantages. Comparative advantages are determined by cross-country differences in relative factor endowments, such as the ratio of land or physical capital to labour, or the ratio of skilled to unskilled labour. Factor abundance is reflected in lower factor prices relative to scarcer factors. Increasing openness to trade will thus induce land abundant countries to specialize in land-intensive products, which it can produce at relatively low costs. Similarly, labour abundant countries will specialize in labour-intensive products. These patterns of specialization affect the sector structure of the economy and relative factor prices and, hence, the distribution of interpersonal income.

In standard international trade theory distributional changes arise from trade induced factor price equalization. The Heckscher-Ohlin theorem holds that international trade raises the relative demand for goods that intensively use the abundant factor and the relative price of this factor will rise. Thus, owners of the abundant factor gain and owners of the scarce factor lose from trade induced shifts in the production structure. The latter effect is formally known as the Stolper-Samuelson theorem (Corden 1997: pp. 66-72).

[61] The strand of literature informally known as the Latin American dependency school can also be considered as a separate body of theory about the relation between globalisation and income distribution, particularly emphasizing the distribution of resources and profits between "core" and "periphery". The main conjecture of this strand of literature was that declining terms of trade contributed to a continuous falling behind of Latin American countries vis-à-vis the industrialised world. The conjectures for the distribution of income within Latin American countries are less clear. The dependency literature does offer important insights as to why countries keep specialising in natural resource based products, while facing declining terms of trade. It is therefore complementary to the globalisation theory outlined above: social groups, such as landowning elites may have special stakes in maintaining the distributional status quo and hence effectively resist change in the production structure in response to relative product and factor price changes (Prebish 1962, Frank 1969). Yet, to adequately deal with the many methodological concerns related to the political-ideological program of the dependency school (see Haber 1997) would take this chapter too far from the red line.

Especially with regards to the Latin American endowment characteristics and specialisation pattern in the late 19th and early 20th century, a simple two-factor, two-country, two-commodity version of the Hecksher-Ohlin-Samuelson model (HOS model henceforth) yields clear predictions of the distributive consequences of globalisation. During this period the majority of Latin American economies (particularly on the mainland) were proto-type land abundant and labour scarce economies and their major trading partners in Europe were, at least from a comparative perspective, labour abundant economies. The historical specialisation patterns reflected these endowment structures. Since the second half of the 19th century Latin American countries increasingly exported primary commodities (agriculture, livestock and minerals) to Europe in exchange, mainly, for manufactured goods such as textiles, machinery, transport equipments and finished chemical products.

The HOS model predicts that the integration of product markets, as witnessed during the first big wave of globalisation between 1860 and 1913, induced a convergence of relative product prices across the Atlantic. The convergence of product prices in turn induced factor price convergence. Due to the increasing demand in Europe for Latin American primary commodities and an increasing Latin American demand for manufactures from Europe, the relative demand for land increased in Latin America. For the Latin American economy factor price convergence implied a decline in the wage-rental ratio. Hence, as a result of globalisation, land owners received a higher price for their land than in a closed economy setting, whereas Latin American labourers, who increasingly competed with their European counterparts, were worse off or gained less from Atlantic trade.[62] Since the ownership of land was (and still is) more concentrated than the ownership of labour a declining wage-rental ratio translated into increasing levels of income inequality, ceteris paribus.[63]

The predictions of the HOS model are based on strict assumptions. It is assumed that trade-partners dispose of identical sets of technologies and consumer preferences and, in addition, that both economies operate under free and perfectly competitive product and factor markets. The factors of production are also held to be perfectly mobile within (but not between!) countries and they are supposed to be fully employed and paid according to their marginal productivity. In other words, Latin America and Europe are assumed to differ *exclusively* with respect to relative factor endowments, such that the relative price of land is lower in Latin America and the relative price of labour is lower in Europe. Although this simple model thus excludes all sorts of dynamic effects of trade relating to a general rise in

[62] It is very well possible in a context of growth that both land rents, capital rents and real wages increase, but that the price rise of land outpaces the price rise of labour. A similar logic applies to a 2x2x2 model in which capital is substituted for land. The occurrence of factor complementarities in the production process may alter the predictions of the model, however.

[63] Bourguignon and Morrisson (1990) and Spilimbergo et.al. (1999) empirically demonstrate that, from a cross-country perspective, land and capital abundant economies are characterised by significantly higher levels of income inequality than labour and skill-abundant countries.

productivity and an expansion of total GDP and sector spill-over effects or shifting consumer preferences, there are two specific reasons why the HOS model forms an appealing framework to assess the case of Latin America.

The first reason is that the majority of LAC's were, with the evident exception of the smaller Caribbean islands, typically land and natural resource abundant countries, relatively scarcely supplied with labour, physical capital and human capital. The land and mineral resource abundant endowment structure has determined the export pattern of LAC's from the start of the colonial era until the 21st century. Table A.5.1 of the appendix illustrates the nature of export specialization in the 20th century, showing LAC's largest export products (and sectors) and their relative share in total exports. The figures show that Latin American exports were dominated by resource-intensive products and that the export packages reveal strong traits of mono-cultural specialisation (Bulmer-Thomas 2003, Thorp 1998). According to the HOS model this pronounced pattern of resource-based specialisation implied that globalisation was especially favouring the small elite of land and mine-owners.

The second reason is that phases of increasing and decreasing international market integration in Latin America are well discernable and that the available empirical evidence, at least for the period 1870-1940, appears to fit the predictions of the HOS model quite well. The first phase of increasing openness, as measured by the share of exports in GDP, took place during the Golden Age of export-led growth between 1870 and 1913. Time-series of wage-rent ratios, which are shown and discussed in section 6.2 of the next chapter (see figure 6.1), point out that land rents increased rapidly relative to wages during this period. The period between 1914 and 1929 can be considered as a consolidation of export-oriented growth, albeit with increasing market disturbances and without the rapid expansion of exports as witnessed before the First World War (Bulmer-Thomas 2003). During these years the trend in the wage-rent ratio in all the observed LAC's started to slowdown and/or reverse.

From the on-set of the Great Depression in 1929 until the mid 1970's Latin America underwent a phase of foreign trade contraction as a result of the world wide globalisation backlash as well as a large scale implementation of domestic import substitution industrialisation policies (ISI henceforth). Besides the declining shares of foreign trade in GDP, foreign investment shares (as a percentage of GDP) fell substantially until the 1970's (Taylor 2000: p. 129, Haber 2006). In the last quarter of the 20th century neo-liberal economic reforms supported increasing trade openness and exports resurged. Between 1975 and 2000 the share of Latin exports in Latin GDP increased from ca. 7% to ca. 20% (Ocampo and Martin 2003: p. 24). According to O'Rourke and Williamson (1999: 74-75) the observed correlation in the periodisation of globalisation and de-globalisation and the movements of relative factor prices raises support for the view that globalisation has induced factor price

convergence across the Atlantic, whereas the disintegration of Atlantic markets during the Interbellum has put a halt to this process.

However, this interpretation also copes with some serious problems. First, the HOS condition of perfect factor mobility is difficult to maintain. Latin American factor markets were (and still are) characterized by huge market imperfections. The mobility of land and labour was severely restricted, particularly during the 19th century. In chapter two and three it has been shown that the access to land was deliberately impeded by restrictive land market policies. Besides, the mal-functioning of capital markets, and especially the restrictive access to small loans for the poor, formed a well documented obstruction to capital mobility (De Soto 2000). Insurmountable transaction costs in capital markets created additional entry barriers to the markets for land and education.

In the rural sectors of the Latin American economies large parts of the labour market were characterized by semi-feudal institutions, such as debt peonage, coercive labour services and the open or hidden practice of slavery. And although the long run tendency towards proletarisation of the rural labour force was undeniable (Duncan and Rutledge 1977), it took place against the backdrop of evident discriminative labour market policies.[64] Without analysing the implications of labour and land market imperfections on factor price movements it remains to be seen to what extent global trade or institutions-based monopolies were responsible for channeling the fruits of export-led growth into the hands of the land and mine-owning elites.

The second problem is that the HOS condition of full employment of the factors land and labour is violated, particularly in countries with such extensive "empty hinterlands" as Argentina. For the HOS model to apply it is essential that the factor intensities of traded goods encompass the relative factor endowments of the trade partners. This means that the relative factor endowments of trade partners belong to the same "cone of diversification".[65] If this condition is violated, factor price equalization may not occur because one of both production factors is no longer fully employed (Burkett 2000). The overabundance of land in Argentina, for instance, may have constrained the predicted increase of land rents in the wake of globalisation. The fact that historical empirical evidence (see figure 6.1) for Argentina

[64] In Chile, for instance, the proletarisation of the rural labour came to a sudden halt around 1860, when rapid changes in international demand and technological innovations in agriculture raised the demand for labour. Landowners increased the labour-service obligations of their *inquilinos* (tenants) on their estates (see Duncan and Rutledge 1977, pp.10-12, Kay 2001, Collier and Sater 2004). So either via (renewed) labour bondage, or via control of the land market, the scarcity of labour that was likely to occur in a free factor market setting, was effectively turned into an excess-supply.

[65] The term "cone of diversification" refers to the area which falls between the lines that graphically describe the expansion paths of production with different factor intensities. These lines start out together at the origin and if the production function inhibits constant returns to scale these lines are straight, thus creating a cone-shape.

nevertheless reveals a strong rise of land rents in the period before the First World War, can only be explained by the effect of globalisation *in combination* with land market institutions that effectively restricted the access of the rural labour force to unexploited resources of land.[66]

The third problem is that the predictive value of the HOS model for the post-war era is much more limited than for the period 1870-1940. The conjectured positive correlation between globalisation and inequality is based on specific historical comparative advantages, which rapidly changed in the course of the 20th century. Unskilled labour has become an abundant factor in production in virtually all LAC's. Hence, according to the HOS model unskilled wage-earners should benefit from international trade and we would expect a decreasing impact, rather than an increasing impact on income inequality levels. Yet, since the full employment assumption of the HOS model fails to hold in the context of un- and underemployment, the globalisation perspective remains largely inconclusive on how the benefits of globalisation are distributed in the last decennia of the 20th century (Behrman et al. 2003).

Since the 1970's foreign trade rapidly diversified towards manufacturing exports. The changes in the export structure of Brazil and Mexico may illustrate the magnitude of this process: in 1970 respectively 83% and 59% of total exports in both countries consisted of products of the ISIC rev. 1 categories 0 to 3[67], in 2000 these shares had declined to 41% and 15% respectively (UN, *Yearbook of Trade Statistics* 1972, 2004). In correspondence with this trend of export diversification there was a rapid increase in intra-regional trade. The share of intra-regional exports rose from ca. 7% in 1960 to ca. 21% of total Latin American exports in 2000 (Frankema and Smits 2005, 2007). Countries with initially identical comparative advantages, i.e. in terms of their historical factor endowments, increasingly started to trade with each other. The increasing diversification of the contents and direction of Latin American exports has arguably reduced the explanatory power of the basic HOS model.

5.3 The distributive consequences of factor biased structural and technological change

The process of structural change is defined here as a shift of employment out of less productive sectors towards more productive sectors. In the long run structural change is driven by the adoption of technological and organisational innovations and entails important

[66] From an international trade perspective such restrictions may also be related to a lack of investments in appropriate infrastructure, which keeps domestic transportation costs for agricultural exports at prohibitive levels (Leff 1997: pp. 46-51).

[67] These categories represent resource-based commodities including agricultural produce, food, beverages, tobacco, crude materials and minerals, including mineral fuels such as oil.

economic and social transformations, such as an increased rate of urbanisation and industrialisation as well as large shifts in the skill, age and sex composition of the labor force (Kuznets 1971).

The globalisation process co-determined the nature and pace of structural change in Latin America. The expansion of the export sectors and corresponding improvements in transport technology, infrastructure (railways in particular) and urban sanitary facilities (sewage systems in particular) sped up the demand for unskilled labour in urban service sectors, while the general increase in wealth enlarged the demand for non-agricultural consumption goods. Hence, cities with a commercial-bureaucratic function expanded rapidly and some of the coastal capital cities such as Buenos Aires, Montevideo, Santiago, Rio de Janeiro, Lima and Caracas merely exploded. For instance, in Brazil the number of cities with more than 100,000 inhabitants increased from three in 1872 to ten in 1940 and their share in total population increased from 4.9% to 10.7% respectively. Comparable rates of urban expansion were found in Argentina and Chile. Although the bigger cities were especially attractive, urban expansion affected the entire range of urban centres, including towns and villages with inhabitants between 10,000 to 20,000 citizens. In the mining areas in Mexico, Chile, Bolivia, Peru and Venezuela cities also developed at very fast rates (Scobie 1986: pp. 237-49).

While globalisation stimulated urbanisation, it to some extent burdened industrialisation. Cheap and often superior European (mainly British) manufacturing imports flooded the domestic consumer markets and the Latin American export sector remained almost entirely based on the first-stage elaboration and refining of locally extracted raw materials, at least until the 1960's (see appendix table A.5.1). While income per capita increased at more or less comparable rates, the development of advanced industries adopting modern factory systems with capital-intensive production processes lagged far behind the industrialising countries in Europe, Japan and the New World (Lewis 1986, Chandler 1990). This did not mean that the industrial sector did not grow between 1870 and 1913. The traditional orientation of the industrial sector on small scale enterprises and local workshops (*obraje*) managed by artisans did not suffer much from import competition and in some industries scale increases did occur.[68]

Figure 1.2 (chapter one) shows that a considerable part of the overall growth of the urban population and the industrial labour force took place between 1870 and 1950: the urban

[68] Most notable was the rapid rise of textile factories, investing large sums in imported machinery to reach establishments sizes comparable to international standards already before 1913 (Haber 2006). Capital intensive enterprises were also typical for the booming railway industry. Hence, a few of the larger cities in Latin America, such as Sao Paulo (Brazil), Medellín (Colombia) and Monterrey (Mexico) managed to strengthen their economic function as leading industrial centres, where technology spill-overs from advanced capital-intensive factories to smaller traditional establishments enhanced structural change in the industrial sector.

labour force increased from 22.3 to 50.5% and the industrial labour force rose from 9.5 to 20.5%. Yet, with the exception of Argentina and Uruguay, the early post-war era (1950-1980) was the heyday of urban industrial expansion (Lewis 1986). Although the aggregate estimates of figure 1.2 are weighted according to population size, they do conceal large intra-regional differences in the timing and pace of structural change. When discussing the implications of structural change for distributional change it is important to keep these cross-country differences in mind. Some of the variety is illustrated in appendix figure A.5.2, showing the changes in the employment structure of the USA, Mexico, Brazil and Argentina from 1870 to 2000.

The literature roughly distinguishes two perspectives on the theoretical relationship between structural and technological change and income distribution. One focuses on the long run transition of pre-modern rural economies towards modern urban and industrialised economies, driven by sustained innovation and productivity growth (Lewis 1954, Kuznets 1955, Abramovitz 1986). The other concentrates on shifts in demand and supply for skilled labour due to technological change and is usually referred to as the theory of skill-biased technological change (Tinbergen 1975, Acemoglu 2002, Helpman 2004). The first seems to apply more to earlier stages of urban and industrial development, whereas the latter seems to be more relevant for post-industrial societies, although this distinction should not be applied too rigorously[69].

The effect of long run structural change on income distribution has been mostly interpreted in terms of the inverted U-curve hypothesis formulated by Simon Kuznets (and his interpreters). Without going into the specific details, the foundation of the Kuznets' curve hypothesis is a dual sector model in which a *between-sector* and a *within-sector inequality* effect is distinguished as a result of growth embedded structural change. Between-sector inequality refers to the productivity and income gaps between the "traditional" or "pre-modern" (from a technological and organisational point of view) rural sector and the "modernising" urban sector. In the process of industrialisation and urbanisation (also labelled as "economic modernisation", see chapter one) the income differentials between both sectors are predicted to increase as a result of increasing technology driven productivity differentials and the larger capital intensity of modern production (Kuznets 1955, 1966, 1971).

Within-sector inequality refers to the process of income polarisation within the modernising urban economy itself. On the one hand a rising class of urban entrepreneurs investing in modern (urban) industries is reaping the benefits of new technological and organisational opportunities. The corresponding rapid increases in the capital stock enhance

[69] Goldin and Katz (1998) for instance analyse the historical transition from artisan production to factory production from a technology-skill complementarity point of view.

productivity growth in the advanced urban sectors and raise the share of capital income in national income.[70] On the other hand, a pool of largely unskilled "surplus labourers" keeps down the real wages of formerly rural workers who migrated from the countryside to the city (Lewis 1954). In the meantime the demand for skilled labour rises with the advance of modern sectors, resulting in increasing skill-premiums. In other words, in the initial stages of industrialisation higher capital-labour income shares and increasing urban wage differentials will enhance within-sector inequality, that is, inequality within the urban economy.

Urban income gaps are predicted to narrow in the mature stages[71] of economic modernisation. If surplus labour is absorbed by urban industries and the fruits of education become wide spread and relatively evenly distributed among the labour force, the labour share in national income starts to increase and urban sector incomes converge. This ideal-type process of economic development coincides with fundamental institutional changes, which can be broadly summarized as the advance of *civil emancipation*: the progress of democratisation and the development of a large middle class. More specifically it can be thought of as the amelioration of the position of labourers, via the legal acceptation of labour movements and labour unions negotiating for social security measures and redistributive taxation. Indeed, in those countries where middle classes (and mass consumption) evolved the share of labour income in national income increased significantly (Kuznets 1966, Soltow and van Zanden 1998).[72]

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70 Since higher savings enhance the capacity to invest in new productive activities and the marginal propensity to save is higher among the rich than the poor, Kaldor (1956) argues that initial income and wealth inequality is good for growth. We may add to this argument that if the rich invest a relatively larger part of their savings in new forms of capital than the poor, growth also enhances inequality.

71 What exactly demarcates the first phase from the later phase is hard to pin down. One can think of increasing real wages as a result of the dissolution of the rural labour surplus. This may be expressed in a trend break in the wage-rent ratio.

72 In explaining the rise of the labour share in six Western countries (UK, France, Germany, Switzerland, Canada and USA) Kuznets also points at the impact of changing ideology: "*To conclude: the share of labor in growing net output has increased, particularly in recent decades, because greater investment has been made in maintaining and increasing the quality of labor. Also, a larger relative share of the gains, after the input of resources adjusted for quality has been considered, has gone to labor – possibly an expression of the higher value that society has now assigned, at least in the free market economies, to the claims of living members than to the claims of their material capital*" (1966: p. 92).

Although the inverted U-curve, after all, was *just* a conjecture[73] and a lack of empirical support raised considerable scepticism about the validity of the hypothesis, the theoretical argumentation has, so far, not been replaced by alternative powerful and comprehensive models of long run distributive change. Of course, even if the underlying forces of structural change are present, they can be off-set by many other forces that are hidden in the *ceteris paribus* conditions. For the case of LAC's the absence of a sustained decline in income inequality in 20th century may imply that sectoral dualism, is a persistent feature of its economic structure. In other words, the curve does not show up but the levels do. Indeed, economic dualism is reflected in large sector productivity gaps as will be shown in the next two chapters. There are also several arguments why the predicted effects of structural change on income inequality were unlikely to occur in Latin America, at least before 1970, but perhaps they did afterwards!

First of all, it is clear that the traditional rural sector was not characterized by relatively egalitarian economic relations, on the contrary. The dualistic production structure in agriculture implied high initial levels of income and asset inequality, so the question is whether a larger share of urban production in GDP translated into a net increase in within sector inequality. This would mean that urban inequality exceeded rural inequality. It remains to be seen to which extent this holds for the case of Latin American economies in which the use and concentration of land in rural production was very large.

A second issue concerns the role of rural surplus labour and the timing of rural-urban migration. Urban economic expansion affected the traditional social, political and economic relations between subsistence holders, landless labourers, tenants and landlords. The latter group was increasingly forced to compete for labour with urban employers and lost part of their traditionally strong grip on the labour market (Wright 1982, Huber and Safford 1995, Bethel 1984). As Scobie (1986) points out, the enormous political influence of the rural caudillos who mustered large armies of rural workers on their estates, rapidly dissolved as a

[73] Generations of scholars have assessed Kuznets' theory exclusively in terms of his inverted U-curve conjecture, paying little attention to the underlying theoretical notions on the relation between structural change and income distribution. The empirical tests of the Kuznets curve delivered controversial results. See, for instance, Paukert 1973, Ahluwahlia 1976a and 1976b, Robinson 1976, Anand and Kanbur 1993, Barro 2000 or Forbes 2000. In his seminal paper Kuznets remarks: *"I am acutely aware of the meagreness of reliable information presented. The paper is perhaps 5 per cent empirical information and 95 per cent speculation, some of it possibly tainted by wishful thinking [……] speculation is an effective way of presenting a broad view of the field; and that as long as it is recognized as a collection of hunches calling for further investigation rather than a set of fully tested conclusions, little harm and much good may result"* (1955: p. 26). Lindert therefore suggests it is time to move away from the Kuznets' curve which "*has to some extent tyrannized the literature on inequality trends*". Lindert also points out that Kuznets was after all "*rather confident about the fall in inequality at some stage but barely asserted the possibility of an earlier rise*." (2000, p. 173). And Fields wrote in response to the literature on the Kuznets' curve in 1980 and 2001, "*Growth itself does not determine a country's inequality course. Rather, the decisive factor is the type of economic growth as determined by the environment in which growth occurs and the political decisions taken*" (Fields 1980: p. 94; 2001: p. 69).

result of urbanisation and the corresponding shift of the centre of power to the larger cities. In the more advanced LAC's, especially in the southern cone, labour-biased institutional change may therefore have compensated and off-set the effects of capital-biased technical change.

The potential scope of such institutional responses to structural change depended, among other things, on the relative demand for skilled and unskilled labour in the urban economy. Labour scarcity in Argentina and Uruguay invoked European immigration and rising wages of unskilled labour until during the era of export-led growth (O'Rourke, Williamson and Hatton 1994). Yet, in Chile, coercive labour and land market institutions were continued to be used to control the supply of unskilled labour. And the degrees of relative labour scarcity differed largely across the region, for example between the Central American countries and the Southern cone countries. The point is that, if landless labourers and impoverished subsistence holders were able to improve their position by migrating to the city, the hypothetical effect on total income inequality depends mainly on the question whether urban productivity growth and the amount of reasonably paid jobs that were created in the urban economy corresponded with the increase in the urban labour force.

The theory of skill-biased technological change (SBTC henceforth) departs from a similar intuitive logic as the Kuznets' curve hypothesis, but adopts a dual *factor* in stead of a dual *sector* perspective. The theory focuses on changes in the skill-premium as a result of changes in the relative demand and supply of skilled labour versus unskilled or low-skilled labour. Tinbergen (1975) described the adjustments in education in response to the introduction and adoption of technology in terms of a "race" between technology and human capital. In the early stages of a technology regime change skill-premiums rise as the supply of technology complementing skills falls behind demand. In a later stage educational catch-up effects may occur.

Empirical and theoretical research on SBTC represents one of the fastest growing fields in current economic literature, which is largely due to the observation in many OECD countries, and the Anglo-Saxon world in particular, of a marked increase in wage inequality since the 1980's, which is an important economic, social and political phenomenon. This is not the place for a detailed discussion of this literature, but it is important to note that out of the many causes that have entered into the discussion, the three causes that receive most attention coincide very well with our explanatory framework. Moreover, they also play a crucial role in explaining increasing levels of wage inequality in Latin America in the last quarter of the 20th century.

The first factor concerns the observed secular growth of demand for high skilled workers in the wake of recent technological change, which is probably accelerated by the revolution in information technology. The rise in demand for skills was not matched by an

equal rise in the supply of skilled workers (Galor and Tsiddon 1997, Bresnahan and Trajtenberg 1995, Levy and Murnane 1992). The IT revolution is considered to polarize the wage distribution by eroding the demand for medium skills through the computerisation of cognitive and manual tasks used in, for instance, administrative areas of work, while complementing workers performing more complex and non-routine problem solving tasks (Autor et al. 2003). Literature also argues that educated workers, *per se*, are better capable of adjusting to new technologies, while the less educated are more likely to suffer from an economic devaluation of their experience and manual skills, which are more likely related to old technologies (Nelson and Phelps 1966, Helpman and Rangel 1999). For Latin America the important question seems to be whether and how the slow expansion of formal education, as discussed in chapter four, has affected the labour markets' accommodation of this secular growth in the demand for skills.

The second factor concerns the impact of globalisation on relative wages of low skilled and high skilled workers. Increasing competition from low-wage economies, especially the emerging Asian economies, puts competitive pressure on the relative wages of low-skilled workers, while the demand for skilled workers may rise through globalisation induced specialisation in high-skilled and high-tech sectors (Wood 1994, Freeman 1995, Richardson 1995). For Latin America the conjectures of the post-war globalisation trend for SBTC are diffuse however. As stated in the previous section, the argument of increased competition may be turned around by the argument that increasing international market integration offers an opportunity to raise the number of low-wage jobs for low-skilled workers in labour-intensive export industries in agriculture or manufacturing. Yet, the specialisation pattern of Latin American exports does not reveal such a tendency. A comparison of measures of revealed comparative advantages (RCA) between Latin America and Asia shows that much of Latin America's advantage lies in capital and technology intensive goods (Pack 1997: pp. 248-51). Labour-intensive sectors have not benefited much from the long maintenance of protective trade barriers (Edwards 1995, see also various contributions in Cardénas et al. 2000b).

The increasing demand for skilled labour and the increasing global competition, especially in the lower segments of the labour market, were combined with the erosion of traditional labour market institutions protecting the position of low and middle wage workers. This trend has been observed in many OECD countries as well as LAC's since the 1980's. Hence, the growing demand for skilled labour and the increasing surpluses of low skilled labour translated into increasing wage gaps. Several empirical studies point out that SBTC is the major determinant of the recent upswing in Latin American inequality in the last decades of the 20th century. The correlation between wage levels and years of schooling appears to be

firm and consistent throughout the 1980's and 1990's (Fiszbein and Psacharapoulos 1992, Londoño and Székely 2000, Behrmann et al. 2003).

In conclusion, it seems beyond doubt that recent increases in wage inequality in Latin America, and probably the increases in interpersonal income inequality as well[74], are the result of SBTC enhanced by the reduction of protective labour market institutions and barriers to international trade. Yet, the crucial question is not whether these forces were active in Latin America or not, they obviously were. The crucial question is why wage inequality in Latin Amerecia seems to have increased so much faster than in OECD countries. Figure 4.1 and appendix table A.4.1 have shown that the average earnings of a Latin American citizen with tertiary education earns two and half times above average, whereas in North America this gap lies just between one quarter and one third (see chapter four). A substantial part of this difference, as will be shown in chapter seven, is caused by a dramatic divergence in relative wages during the later half of the post-war era, in some LAC's since the 1970's, in others since the 1980's.

5.4 Institutional change and distributional change: a collective action perspective

According to North institutions are "*the humanly devised constraints that shape human interaction"* (1990: p. 3). These constraints consist of formal and informal rules structuring the behaviour of individuals and groups of people. The process of institutional change is loaded with country-specific historical and cultural subtleties and the effects of institutional change often differ so much among social groups and individuals, that implications for the overall level of inequality are hard to observe, predict or estimate.

The purpose of this section is to link some of the most important breakpoints in socio-economic policy in the 20th century, in the 1920's-1930's and 1980's, to the forces of globalisation and structural change discussed above. More specifically this section focuses on the evolution of organised labour in Latin America and the changes in political ideologies that were adopted along with the recognition of the political role of the working-class in the course of the 20th century. The introduction of public policies directed at the redistribution of income to the poorer segments of society and the development of state based social security programs is, from a historical point of view, one of the most important institutional

[74] It should be noted that increasing wage inequality not necessarily leads to increasing interpersonal income inequality. If increasing skill premiums raise the labour (wage) share in national income at the expense of non-labour income, primarily capital income, and the distribution of capital rents is more concentrated than the distribution of labour income, which is generally the case, then increasing wage inequality due to rising skill-premiums may reduce overall income inequality. Yet, although this scenario describes part of the major structural changes in the functional income distribution during the industrial revolution, it is not very likely to apply for post-industrial societies.

developments distinguishing most of the 20th century in many countries across the globe from previous eras. Globalisation and structural change affected this process in several ways.

Insights derived from the theory of collective action provide guidance to explain why, how, where and to which extent the political and social position of the labour class altered. In this respect it is crucial to make a distinction between socio-economic policies (institutions) on the one hand and the political-economic context in which these policies evolve on the other hand. Regarding the latter we are especially interested in the "ability" of interest groups to act collectively and create credible threats and commitments which are essential to the evolution and outcomes of bargaining processes (Olson 2000, 2003, Greif 2006).

The first part of this section focuses on the question how globalisation and structural change potentially influenced the rise and relative strength of organised labour. The second part proceeds to discuss the major breakpoints in socio-economic policy in Latin America, focusing on the potential implications for the conjectured trend of inequality.

The influence of globalisation and structural change on the organisation of labour

In the theory of collective action problems of rent appropriation and free-riding are essential to understand why some organisations succeed in pursuing the interests of their members, where others fail, or where people with similar interests are unable to organise themselves in the first place (Olson 2000, 2003). The effectiveness of labour unions depends largely on the ability to pose credible threats to the stability of the social system and to guarantee its members the exclusive benefit from its actions.[75] The response of those who fear instability as well as the instruments they possess to counteract, are important to understand varying responses to the ascent of labour activism.

The process of globalisation, in the broad sense of the word, for several reasons positively affected the opportunities for labour mobilisation. The strengthening of Atlantic commercial ties enhanced the spread of socialist ideology in Latin America and the diffusion of information was facilitated by innovations in communication technology. Labour immigrants from Europe also contributed to the spread of revolutionary ideology. Indeed, without modern communication technology it is hard to imagine that the news of the October revolution in Russia could have given such an impetus to the social agitation in Latin America. As the export sector became leading in many Latin American economies and Latin

[75] In their book *Economic Origins of Dictatorship and Democracy* (2006), Acemoglu and Robinson discuss six key conditions for the creation and consolidation of democracy.: 1) the strength of civil society, 2) the structure of political institutions, 3) the nature of political and economic crises, 4) the level of economic inequality, 5) the structure of the economy and 6) the form and extent of globalization. These conditions reveal much overlap with the structural forces of institutional change in Latin America discussed here.

American governments heavily depended on trade revenues for fiscal stability, union's threats to paralyse the export sector were effective. The geographic concentration of export industries in coastal urban areas made it possible to effectively organise strikes. Also specific concerted actions to sabotage vital infrastructural arteries, such as ports or railways, were potentially damaging (Scobie 1986: pp. 261-4). Such means of pressure could also be used in industries suffering high losses due to disruptions in production, such as mines or construction projects under contractual enforced time-constraints.

The domestic impact of an external economic or political shock is larger in a globalised world. The collapse of the Golden Standard and the outbreak of the First World War required a reorientation of LAC's on the traditional political and economic world order. The shocks of hyperinflation and mass lay offs, caused by extremely volatile world markets, led to high economic insecurity and raised the desire for as well as the fear of revolution. Another example of such a major external shock is the Great Depression, following the Wall Street crash in October 1929. The policy of economic liberalism and export-led growth proved to be unsustainable and required a new vision on economic policy and the modernisation of society (Bulmer-Thomas 2003).

Structural economic change also changed the political economic conditions for labour unions. In the economically more developed LAC's the opportunities for workers to pursue their goals were usually better than in those countries which retained much of their rural and traditional colonial outlook. Much of the difference was related to the advantaged position of skilled, urban industrial workers as opposed to unskilled, rural non-industrial workers, to successfully engage in collective action.

Rural workers, tenant farmers in particular, worked under close supervision of landlords and faced the social control characteristic of (small and disperse) rural communities. Landlords were often able to appease their labour force or break outbursts of discontent seeking cooperation of local peasant leaders they personally knew (Wright 1982). The maneuvering space of urban wage-workers was much less constrained by such communal ties. The urban proletariat had a broader set of alternatives to offer their labour and faced a reduced risk of identification and repercussions. The different levels of dependence and control were also visible in the manipulation of the electoral system: where the landed elites exploited their position to obtain the votes of entire rural communities, urban voting behaviour proved much more difficult to control (Hobsbawm 1998: Chapter 11: pp. 196-222).

Based on the weight of their numbers and concentration, the urban masses, living and working close together, had more leeway to spontaneously engage in mass demonstrations or outbursts of violence. As the vital industries of the modern economy are mostly situated in cities the potential damage that could be caused was higher than in the rural areas and,

therefore, the threats posed to the stability of the political and economic system were graver. The fact that the industrial sector also generated substantial demand for skilled workers further added to the credibility of such threats.

Unionisation was more likely to occur in industries and trades employing relatively many skilled workers (Hobsbawm 1998: Chapter 3: pp. 23-58). As discussed in chapter four, workers with some educational background are important for labour organizations to act in a political strategic manner. Literacy is a prerequisite for the execution of political voice and the diffusion of knowledge and ideology required to mobilise and motivate people to act collectively. Moreover, skilled workers were in virtually all circumstances more difficult to replace than unskilled day labourers, which gave them a more favourable bargaining position. Skilled workers also often had more resources to pay union dues, which are essential for endurance in strikes.

A good example of rapid success in wage negotiations is offered by the union of railway workers in Argentina. Railway workers possessed rather specific skills (and knowledge) which could not easily be replaced. In addition, their work was of great economic and political strategic importance, since the railways constituted the lifeline of the agricultural export economy. Railway workers were therefore one of the first groups of workers who realised considerable wage increases through negotiations. In terms of wage levels, it gave them a status equal to white-collar employees (Spalding jr. 1977). This example, however, also reveals the great weakness of the labour movement in general: the problem of free riding and rent appropriation. Once the demands of specific groups of workers were accommodated, the solidarity with labourers in other sectors diminished, which undermined the sustainability of collective action.

Governments, employers and ruling elites disposed of several methods to break strikes and silence labour protests. Violent repression was just one these. The other extreme was to negotiate and try to reach a compromise with the unions involved. There were many other measures in between. One example is the use of strikebreakers who, by replacing the striking workforce, were used to lower the latter's morale. Such was only possible if there was a surplus pool of labour which could immediately be contracted and put to the job. This naturally depended on the type of work involved and often also to the season of the year. Given the enormous diversity of individual and group interests within the working class, possibilities to undermine worker's solidarity were tried in many occasions.

Weak spots in striker's solidarity existed between skilled and unskilled labourers, between workers in various sectors, between urban and rural workers, between workers from different regions and between workers with different ethnic backgrounds. The introduction of a central union failed in many LAC's because of the problem of rent appropriation. Therefore

the basis of organisation was usually the specific production sector (railways, mining, textile industry) or occupational group (typographers, shoemakers) to which workers belonged.

Responses to labour unrest were also determined by the diversity of elite's interests. These were, in turn, related to the level of economic development and the ascent of new (mainly urban) economic elites, but also to the extent of inter-regional competition between elites (Brazil, Mexico) and the attitude of the church and the army. Especially between the vested land-based elites and a new class of urban industrial entrepreneurs diverging interests could lead to conflicts over the implementation of land reforms, the introduction of food price regulation programs favoured by urban employers and labourers, increasing investments in public education demanded by industrial employers demanding skilled employees or, in general, the redistribution of income to promote urban industrial development (Wright 1982, Huber and Safford 1995).

The advent of organised labour in Latin America, 1870-1940

The four decennia before the First World War constitute the "*formative period*" of Latin American organised labour (Spalding jr. 1977: p. 1). Between 1870 and 1913 the number of strikes dramatically increased throughout the region, some of which transformed into mass revolts and attempts to undermine the economic system or the incumbent regime. Increasing social unrest and outbursts of violence came along with an increasing degree of collective organisation of workers. Among the early institutional responses to workers protests was the legal recognition of labour unions and the right to strike. A few small, yet unprecedented, improvements in workers conditions were accomplished. Laws were passed to curtail some of the most excessive forms of labour exploitation and abuse, especially concerning child and female labour. In some cases strikes were ended by an employer's commitment to raise wages or reduce working hours.

Though important, these were only minor steps compared to the rapidly growing political concern for the position of labour during the interwar years. The real impetus to the power of the Latin American labour movements came in the turbulent years between 1914 and 1921. The economic disruption and the rising costs of living during the First World War and a second major slump in the early 1920's fuelled social discontents. The Russian revolution in 1917 further enhanced social unrest and, eventually, convinced the political establishment that the threats of organised labour to the political status quo could no longer be neglected or simply dealt with by seeking recourse to the state's monopoly on coercive force. The growing awareness that the social question had to be resolved by political compromise,

rather than military repression, led to the acceptance of new political ideologies among the ruling elites in the more modernized LAC's.[76]

In Argentina and Chile, two countries with relatively well developed labour unions, the trend in the number of strikes shows how the pressure built up in the early 20th century. In Argentina the first notable signs of large scale organised labour protests occurred in the 1890's. The *Unión Cívica Radical* launched a revolt in 1893, and again in 1905, and managed to concentrate reform-minded radicals, socialists and anarchists under one banner. In the years 1891-1896 there were 58 officially recorded strikes, whereas between 1907 and 1913 the number of strikes had increased to 1,081. The growing popular demand for political change led to the introduction of electoral reforms in the Saenz Peña law of 1912, arranging universal male suffrage, secret balloting, and stricter control against electoral manipulation (Acemoglu and Robinson 2006: pp. 5-8). During the years 1917 to 1921 labour activism reached its peak. In the year 1919 alone there were 367 registered strikes, involving a record amount of strikers of 308,967 (Spalding jr. 1977: p. 25 and 53). The political results were tangible. In 1922, the Radical party won the presidential elections and under the Alvear presidency, public spending was largely expanded to meet the demands for inflation-correction of wages. During the rest of the 1920's real wages soared and the number of strikes decreased accordingly. Budgetary problems also raised: during the 1920's an estimated ten to twenty thousand new jobs were created in the national government alone (Rock 1975: pp. 180-228).

In Chile the rise of labour activism was temporarily resolved with the defeat of the "parliamentary republic" and the ascendancy of the populist president Alessandri in 1920. In the first decade of the 20th century the number of labour unions had increased exponentially (Loveman 1987). Between 1902 and 1908 there were an estimated amount of 200 strikes, some of which were ended with brutal military repression. A violent protest against rising

[76] Until the 1930's elite's preferences for an authoritarian, if needed repressive, state combined with a liberal economic policy and a progressive stance towards national development, were united in the philosophical framework of Positivism (Bakewell 2004: pp. 454-6, Williamson 1992: pp. 298-300). Positivist ideology legitimized a state taking the lead in the moral enlightenment of the masses. Public education was considered as the crucial channel to moral development and national progress, but at the same time it was strongly believed that the innate capacity to appreciate the fruits of education was not widely shared (see also Chapter four). Where Positivism was intertwined with Social Darwinist views, the ruling argument was that wealth and success in life were the direct result of rational and moral superiority. The rich and the poor both deserved their fate. Individual liberty, translated in economic liberalism, provided every member of society with the opportunity to realize their potential, but special attempts to improve the conditions of the poor were doomed to fail. The foundations of Positivism were laid by the French social philosopher August Comte in his stage-theory regarding the development of human societies. The development of the natural and social world was cast into three consecutive stages: the "theological", the "metaphysical" and the "positivist". The latter was the highest attainable stage where reasoning and comprehension were guided by empirical verification. A lot of Latin American intellectuals viewed the colonial era as the theological stage dominated by irrationality, the post-colonial era as the metaphysical stage and hoped to raise their countries to the positivist stage by promoting science, education and modernization (Bakewell 2004: p. 454). Positivism eventually fell into disarray under the inevitable demands for a dramatic turn in economic policy in the 1930's.

meat prices in Santiago, October 1905, resulted in a mass slaughter with circa 200 casualties. The "social question" climbed to the top of the political agenda and spurred by the general discontent about growing economic insecurity in the years 1917 to 1920, mass demonstrations freed the way for a regime change. Collier and Sater refer specifically to the big impact of the Russian Revolution in these years of turbulence (2004: p. 200).

In Mexico a similar timing in the process of political change was observed. Although the political stakes in the Mexican revolution of 1910-1919 were very complicated, the end of the civil war did result in important concessions to labourer's demands. In article 123 of the new constitution of 1917 the principles for the improvement of labour conditions were established: a maximum working day of eight hours in a six day working week, the prohibition of female and child night work in industry, a fixed minimum wage, and more attention for worker's safety and insurance (Hamnett 1999: p. 223, Gilly 2005).

In other parts of Latin America the changes in the attitude of the ruling elite and labour policies were either less fundamental or timed differently. In Brazil, where the degree of organization of urban workers was much weaker than in Argentina or Chile, the traditional agrarian elites residing in São Paulo successfully repressed the voice of the labour unions throughout the 1920's. Only with the Great Depression and the inevitable economic policy reforms, the populist regime headed by Getúlio Vargas (1930-1945) was prepared to combine repression with concessions to control the mobilization of industrial labour and to contain the threat of communism (Spalding jr. 1977: pp. 151-6, Greenfield 1987).

The use of military force to break labour revolts was continued in most Central American countries for even a much longer time.[77] In El Salvador, for instance, in 1932 a violent rebellion of hungry and frustrated, mostly Indian, plantation workers actively supported by communist leaders party, was brutally repressed and ushered in a phase of almost fifty years of harsh military rule (Brignoli 1995). But also in the South American countries such as Venezuela, Ecuador and Bolivia, the political voice of the labour movement remained much weaker during the interwar years, so that the ruling elites were not really challenged to alter their strategies in response to the demands for political recognition by the labour unions (Ellner 1987, Milk 1987, Volk 1987).

[77] In Costa Rica early democratic reforms served as a prelude to stability. As a smallholder coffee economy with relatively limited class distinctions, free and fair elections were already recorded in 1889, and the country suffered much less of the hardship other Central American countries did in the struggle for civil rights (Gudmundson 1995).

Economic populism and ISI policies, 1929-1979

The transition from a formative stage of unionisation (1870-1913) into a phase of effective realisation of union demands after the culmination of protests in the late 1910's, yields a clear prediction of the inequality trend. As a result of rising real wages and an increasing share of labour income in total factor income in the 1920's and 1930's we would expect to see a considerable decline in income inequality, that is to say, in the economically more advanced LAC's. Real wage increases were complemented by significant reductions in working hours, the eradication of the worst forms of labour exploitation and the implementation of early social insurance and pension schemes. Union membership rates increased rapidly along with these tangible examples of social progress. Moreover, the rapid improvement of welfare indicators such as life expectancy and literacy rates during the period 1940-1980 support the contention that deliberate social policies were, on the whole, positively affecting broad layers of Latin American society (Astorga et al. 2005).

The change in political orientation came along with rapid improvements in democratic (electoral) participation. Of course, social progress and civil emancipation did not evolve along linear nor irreversible lines, but it can be asserted that the topic of income and wealth distribution per se, became recognised as a legitimate concern of the "working class", while labour unions became recognised as the natural political representatives of labour's interests during the half century following the Great Depression.

Inevitably, this period was also marked by a certain consolidation of the labour-capital dichotomy. Consecutive regimes attempted to encapsulate labour unions and their electorates in the political system. The year 1929 is important as it marked the starting point of radical reformulations of economic policy. The most important goals of the economic reforms were to diminish the dependency on international markets and the potential impact of foreign economic shocks as well as broaden the domestic economic basis. Protectionist trade policies and specific industrial development programs were the primary means to achieve these aims. The policy of import substitution industrialisation (ISI policies henceforth) was based on the infant industry argument and characterised by increasing protectionism and state intervention, showing up in detailed investment and output schemes, state-ownership of vital industries (also by the nationalisation of formerly, mainly foreign-owned, private firms), the protection of wages against inflation and (food) prices and the allocation of subsidised credits to state favoured enterprises.

These interventionist economic programs were connected with a new current in political entrepeneurship: *Populism*. The urban biased-polices of populist regimes eroded much of traditional political influence of the land-based elites. Cardoso and Helwege give a concise description of the advance of populism in the 1930's:

"*Classical populism represented an urban political movement that opposed the primary-product, export-oriented status quo of the nineteenth century and endorsed accelerated industrial development. It constructed alliances linking the working class to the industrial bourgeoisie and minimized interclass antagonisms through the propagation of a broadly nationalist ideology*." (1992: p. 204)

This is perhaps one of the most pointed characterizations possible, since populist regimes generally had no real political program and used to act according to acute circumstances rather than a long term vision or clear-spelled ideology. The administration of Perón in Argentina (1946-1955) is probably the best known example of a populist regime, but also the Vargas regime in Brazil (1930-1945), the presidency of Cárdenas in Mexico (1934-1940) and the administration of Velasco in Peru (1968-1975) are good examples. A crucial distinction in the approach of socio-economic problems between populist and socialist regimes (as under Allende in Chile (1970-1973) or the Sandinistas in Nicaragua) is that populist leaders had no intention to overthrow the existing system by revolution, but rather to reform the system backed by urban popular and industrialist support (Cardoso and Helwege 1992).

These reforms fundamentally altered the traditional, and to some extent still feudal, style of capitalist development. The oligarchic nature of the export economy, in which a small elite held absolute control over key natural resources, was exchanged for a model in which public asset ownership and national interests challenged the primacy of private interests. Due to the (initial) success of state-led industrialisation programs growth rates during the period 1940-1980 reached levels that were never recorded before (see table 1.1 in chapter one). The institutional changes spurring the process of structural change channeled an increasing part of the fruits of economic growth to wage labourers. For these reasons populist policies were likely to have had a progressive redistributive effect on the distribution of personal income.

Yet, the conjectured decline of income inequality after 1929 may have been off-set by various other forces. The rise of leftist parties in the political spectrum provoked counteractive measures of the traditional conservative right-wing elites. The implementation of military dictatorships in the southern cone countries during the 1970's are the most dramatic examples. The imbalances in the distribution of power between the left and the right showed that populist's attempts to bury the roots of the grave distributive conflicts in nationalist rhetoric and urban development programs were doomed to fail in the long run (Smith 2005, Smith and Korzeniewicz 1997). Moreover, the endemic political instability had other economic causes which were strongly related to the issue of income distribution.

The redistributive program carried out as part of the ISI policy framework was selective. It was especially beneficial to urban industrial workers, but it often disfavoured the

poorest groups in society, i.e. the deprived (and often landless) rural labourers and peasants and the underemployed urban informal sector workers. Food price controls and the urban-biased allocation of public investments led to an increasing gap in economic perspectives for urban and rural people, whereas urban informal sector workers, who were predominantly engaged in low value added service activities, were excluded from all the legal benefits that applied to formal sector jobs.

The macro-economic disequilibria that were created on the basis of over-optimistic growth projections in the long run, such as unsustainable fiscal deficits and levels of foreign debt, undermined the sustainability of growth and social security. Outbursts of hyperinflation, temporary output crises and mass lay-offs especially hurt the lower-income segments of society Inflation ate away the modest savings of low and middle income classes, deterred confidence of private investors in the domestic economy and undermined the capacity of Latin American states to attract the foreign capital needed to finance current account deficits, debt repayment schemes and new investment programs (Cardoso and Helwege 1992, Psacharopoulos et al. 1997).

In sum, one of the key questions regarding the conjectured inequality trend is to which extent ISI policies, including its social programs, supported the rise of an hitherto small urban middle class and, at the same time, to which extent it excluded the poorest groups in society and supported the rise of an hitherto small urban informal sector. Was the decline of the secular income inequality trend during the interwar period sustainable during the early post-war years?

In chapter seven I will argue that the historical legacy of asset inequality plays a key role in answering this question. Improving the access to economic assets through redistribution of land or public education policies, in the long run, enhances the number of productive jobs. Yet, the persistency of land inequality in Latin America (see chapter three) and the lack of effective land reforms during the ISI policy period created lack of economic perspectives for the rapidly growing population in the country side. The meager improvements in the quality of public education (see chapter four) and the barriers to access the capital market (de Soto 2000) condemned large groups to low-productive jobs in the growing urban informal sector. The failure to complement income redistribution policies with reforms in the distribution of assets is crucial to explain the increase in income inequality in the last decennia of the 20th century.

Neo-liberal reforms, 1982-2000

The irony of Latin American ISI policies was that they were implemented in 1930's with the objective to reduce the region's dependency on international (commodity) markets, but

eventually created a whole new dependency in the form of unsustainable levels of foreign debt. The oil-crises in the late 1970's initiated the gradual withdrawal of foreign capital out of Latina America. The recession of the 1980's that followed in the wake of the debt-crises heralded the definitive end of interventionist economic policies. The failure to sufficiently strengthen the competitiveness of its industries, thereby incurring future economic stagnation, eventually hurt the most vulnerable groups in society most. The lost decade of the 1980's was therefore not just an "ordinary" debt crises, it was a complete crises in the prevailing socio-economic ideology (Thorp 1998, Cárdenas et al. 2000b, Edwards 1995).

With the advantage of hindsight one can argue that the structural imbalances inherent in the protectionist path of economic development had to lead, at some point in time, to major economic reforms (Edwards 1995, Cortés Conde 2006). The general objectives of the reform programs (which varied largely in pace and nature from country to country) were twofold. In the short run the goals were to curb inflation, restore budgetary balances and resolve current account deficits. In the long run the goal was to enter the path towards a more and market-oriented economic system. Important policy measures were the liberalization of domestic factor markets, the privatisation of national industries, a step wise reduction of import tariffs, a removal of barriers to FDI and the restructuring of inefficient (and uncompetitive) industries and public service sectors.

Empirical studies have shown that during the period of crises and reforms in the 1980's income inequality increased markedly in the far majority of LAC's. Moreover, this increase was sustained in many LAC's throughout the 1990's (Psacharopoulos et al. 1997, Morley 2001). This finding suggests that, apart from the temporary effects of the "lost decade", the neo-liberal reforms have had deeper implications for the distribution of income. Yet, it is very difficult to exactly identify the channels of causality. One of the questions is whether the economic reforms themselves enhanced inequality, or whether they failed to sufficiently check inequality-enhancing forces that were already present before the 1980's?

Criticasters of the neo-liberal reform agenda have asserted that it fails to take account of the underlying structural problems of Latin American economic development. These structural problems relate to the accessibility and quality of education and the persistence of credit market imperfections burdening the lower income classes, the prevalence of corruption and the general lack of good governance. In other words, the neo-liberal reforms have reduced market interventions, but they have not done so much to reduce market imperfections (De Soto 2000). The resurgence of globalisation drove inefficient sectors out of competition and enhanced structural change, yet at the same time supported the traditional bias towards resource-intensive manufacturing sectors, which primarily compete on costs (cheap inputs of raw materials and energy) rather than high levels of value added per worker (see for the case of Mexico, van Ark et al. 2005). The failure of the neo-liberal agenda to develop a clear

policy package to tackle the traditional "social question" implied that, sooner or later, political instability and demands for increasing government expenditures will reoccur (Green 2003).

The argument I will develop in chapter seven is that the roots of the problem of increasing inequality must be sought, not so much in the failure of neo-liberal reform programs, but rather in the lack of structural reforms between the 1940 and 1980, which was a period of rapid economic growth that created sufficient economic leverage to invest in education and rural development, apart from developing the urban industrial sector. The reforms towards market liberalisation have removed the factor market imperfections (such as wage regulation programs) which had compressed the "natural" level income inequality since the 1930's. Given the persistence of asset inequality, this "natural" level of income inequality was and still is very high. In particular when demographic growth reached its peak in the early post war years (and labour force growth reached its the peak in the l970's and 1980's, new generations of labourers were still badly prepared for competitive productive activities in a rapidly changing global economic and technological environment. Confronted with a lack of economic perspectives in both, the countryside and the city, the shortage of formal sector jobs for unskilled labourers in Latin America became an economic and social problem which could not be resolved overnight. The economic recession of the 1980's may have been a proximate cause of increasing inequality, the failure to address the colonial legacy of asset and wealth inequality in a period of unprecedented economic growth is the ultimate cause of the recent upward trend in inequality.

5.5 Conclusion

This chapter has offered a discussion of various theoretical and historical perspectives on long run distributive change in Latin America. The integrative approach emphasizes the mutual feedback mechanisms between the forces of globalisation, structural change and institutional change and the endogenous character of institutional development. This explanatory framework has been evaluated with regards to specific Latin American initial conditions and historical circumstances (global and regional economic and political events), part of which have been more extensively discussed in previous chapters. The overall result of this discussion is a stylized picture of the secular inequality trend in Latin America, in which the trend breaks are distinguished by fundamental changes in the course of socio-economic policy. The two conjectured turning points are identified in the interwar period and in the 1970's to early 1980's. Here follows a summary of the main arguments.

1) Before the First World War export-led economic growth in the context of rapid market integration in the Atlantic economy led to increasing income inequality. This "Golden Age" of economic growth was characterised by liberal economic policies safeguarding the interests of the export sector and its primary stakeholders. Given the concentration of political power and the underdeveloped state of democratic control, the prevailing institutional environment safeguarded the economic interests of the major asset owners. Hence, the larger share of increasing profits and rents was channeled towards the members of the elite, and particularly the landed elite. In the mean time, the process of urbanisation and industrial development, paved the road for the rise of the labour movement.

2) In the fifteen years between the First World War and the Great Depression, LAC's witnessed three major slumps as a result of international market distortions and two major political revolutions (Mexico and Russia). These exogenous economic and ideological shocks forced Latin American administrations to reorient their socio-economic policies. The effectuation of labour oriented policies increased the share of labour income in total national income and improved the ratio of wages versus land rents, as will be shown in chapter six. The ascent of a new class and a new style of political leadership reflected the extension of political participation towards a larger share of Latin American citizens, particularly in the more advanced LAC's.

3) In the middle of the 20th century, after the economic crises of the 1930's, the export-led model of economic development rapidly dissolved and socio-economic policies tended towards state intervention and economic protection in combination with income policies tailored to urban and particularly industrial workers. The original political influence of the land-based elites diminished as a result of both, the ascent of labour unions and leftist parties as well as populist regimes supported by (new) urban industrial elites. The share of public asset ownership increased and wage inequality remained compressed by wage regulation programs. Hence, the implementation of ISI policies are likely tohave had reducing impact on interpersonal income inequality, or at least, consolidated the decline in income inequality established during the interwar period. However, economic recessions, periods of hyperinflation and years of political instability may have reversed the declining trend in the short run. More structural forces may have off-set the declining trend in the long run, especially when the share of the labour force that was excluded from beneficial social and income policies increased. Estimates of the size of the urban informal sector in chapter seven suggest that especially in the 1970's the growth of the "excluded" groups in the labour force accelerated.

4) Volatility in international goods and capital markets in the late 1970's heralded the end of increasing foreign debt-incurring ISI policies in Latin America. The economic crises and reforms went along with an empirically established increasing inequality trend. This chapter has argued that, as in many OECD countries, skill-biased technological change, in conjunction with the erosion of protective labour market institutions and increasing global competition, is a likely candidate to explain rising interpersonal income differences since the early 1980's. Yet, I will argue in chapter seven that the changes in the functional income distribution, and especially in the wage distribution, are much more dramatic than in the OECD countries. This requires an additional explanation, where the historical perspective developed in this and the previous chapters will prove to be indispensable.

Altogether, the crucial conjecture of this chapter is that the secular inequality trend in Latin America has witnessed two major turning points in the course of the 20th century. The following two chapters will focus on the empirical assessment of these two turning points. Chapter six focuses on the dynamics of the factor income distribution between 1870 and 1940. Consequently, chapter seven explores the development of the urban informal sector and the trends in urban wage inequality in the period 1940-2000.

Chapter 6

Patterns of Change in the Distribution of Factor Income, 1870-1940

6.1 Introduction

The purpose of this chapter is to empirically assess the validity of the theoretical conjectures discussed in the previous chapter, focusing on the period 1870 to 1940, adopting an international as well as an intra-regional comparative perspective. Do the patterns of change in the distribution of factor income raise support for the demarcation of the secular inequality trend discussed in chapter five? The analysis focuses on four key-components of the functional income distribution framework: trends in land rents, urban wages, skill-premiums and the development of relative capital-labour remunerations (see figure 1.4).

In the early industrialising LAC's, particularly in Argentina, Brazil, Chile, Mexico and Uruguay, the period between 1870 and 1940 can be considered as a first stage in the transition towards a modern economy.[78] Although the peak in industrialisation, rural-urban migration and demographic change occurred in the years between 1940 and 1980, changes in the composition of factor and sector income between 1870 and 1940 were impressive by historical standards. Cities expanded rapidly in the wake of a growing demand for manufacturing products and improved facilities for commercial activities. High rates of economic growth (especially between 1870 and 1929, see table 1.1) in combination with a rapid expansion of the export sector shifted the centre of economic gravity definitively towards the urban (coastal) centres.

Notwithstanding the marked volatility and intra-regional variety in the pace of economic growth, economic and demographic expansion was, in comparison with the earlier part of the 19th century, beyond precedent. Moreover, the process of structural change came along with fundamental social and political changes, so that at the eve of the Second World

[78] Literature usually chooses the years 1930 or 1940 to denote the end of this first phase (see for instance Bethell 1986, Thorp 1998, Bulmer-Thomas et.al. 2006 or Williamson 2006). The choice for one or the other benchmark year (which is, regarding the continuous nature of the historical process, to some extent arbitrary anyway) depends on the interpretation of the role of the Great Depression as the watershed in the socio-economic policy orientation of LAC's. A choice for the year 1940 emphasizes the effectuation of new economic policies after the recovery of the crises in the 1930's, whereas the year 1930 emphasizes the crises itself as the watershed in economic policy. The choice for the year 1940 here is motivated by a more practical argument: it offers a better assessment of long run trends in functional income including the break points observed in the early and late 1920's.

War the traditional political stronghold of the landowning elites, controlling the key resources of the economy (including large parts of the rural labour force) was effectively dismantled in the more urbanised and economically advanced LAC's (Wright 1982, Bakewell 2004).

This chapter investigates some of the main empirical trends in the structure of the functional income distribution, and specifically in the distribution of factor income, in the context of this economic and institutional transition process. Section 6.2 discusses the trends in the ratio of urban unskilled wages over land rents and GDP per capita. In section 6.3 the comparative levels of urban wage differentials across LAC's and New World countries (NWC's henceforth) are analysed and section 6.4 proceeds with a comparative analysis of the relative capital intensity of the developing urban and industrial sectors. Section 6.5 presents the conclusion.

6.2 The trend in urban unskilled wages versus land rents and GDP per capita, 1870-1940

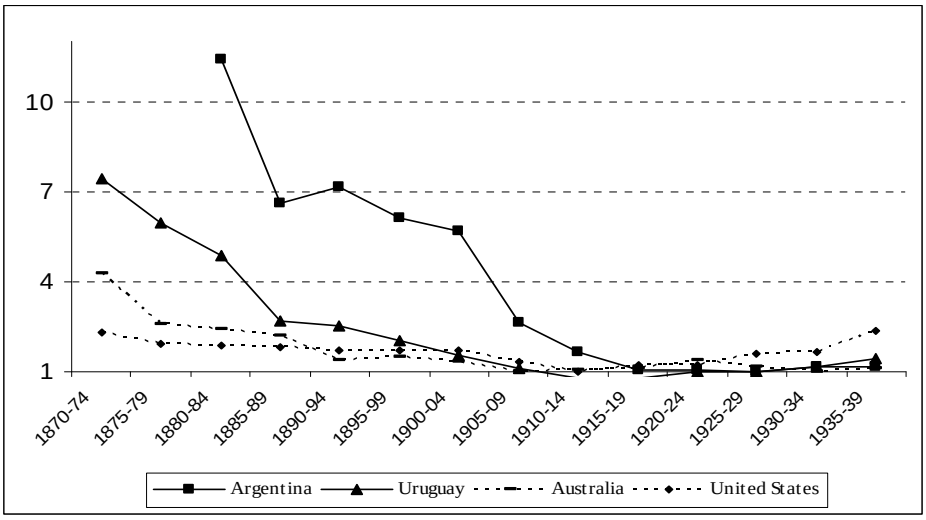
The revolution in transport technology and the rapidly increasing demand for raw materials from industrialising Europe enhanced the Atlantic trade connections between Latin America and Europe from the mid-19th century onwards. With the diffusion of railway infrastructure and the introduction of steamships the costs of freight traffic declined and spurred the amount and diversity of commodities that could be traded overseas at a profit. Complementary technologies, such as the refrigerator and the motor engine further expanded the opportunities for long distance trade and economic specialisation (O'Rourke and Williamson 1999). Although recent literature tends to redirect the attention to domestic economic developments, there is little disagreement on the view that the first wave of globalisation was the major engine behind the economic modernisation process in the period 1870-1929 (Glade 1986, Thorp 1986, Haber 2006).

To test the predicted distributive implications of the first wave of globalisation and de-globalisation in Latin America as discussed in the previous chapter (section 5.2), the ratio of real urban unskilled wages over land rents per hectare is, arguably, the most suitable available historical measure (Williamson 2006). The share of exports in total GDP in Latin America increased from 10% in 1850 to 25% in 1912 (Bulmer-Thomas 2003, p. 420), plunged during the first years of the First World war, yet recovered during the 1920's, driven by surging trade with and capital investments from the US. During the 1920's trade was more volatile than before the war and many LAC's had to expand their market shares in order to keep their trade balances positive (Bulmer-Thomas 2003, pp. 153-88). After 1929 virtually all LAC's witnessed a strong setback in both the value and volume of exports. Given the general land abundance of Latin American economies (with the notable exception of the Caribbean),

the HOS model predicts decreasing wage-rental ratios in the period 1870 until 1913. For the years between 1914 and 1929 the conjectured trend is less decisive. Obviously, after 1929 we would expect an increasing trend.

So far, time series of wage-rental ratios are only available for Argentina and Uruguay. Both countries disposed of a distinctive land-abundant and labour-scarce endowment structure as well as clear specialisation in grains and livestock products (see appendix table A.5.1), implying a high suitability to test (and possibly reject) the globalisation hypothesis. Figure 6.1 shows the trends in wage-rental ratios for both countries, including Australia and the USA for comparative purposes. The trend is presented as an index figure, where, the year with the lowest wage-rental ratio observed is set at one in order to identify the turning points in the long run trend. The data are derived from Williamson (2002: pp. 73-4).

Figure 6.1: Trends in the ratio of real urban unskilled wages over land rents in Argentina, Uruguay, Australia and the USA, 1870-1939 (Index figures, lowest observation = 1.00)



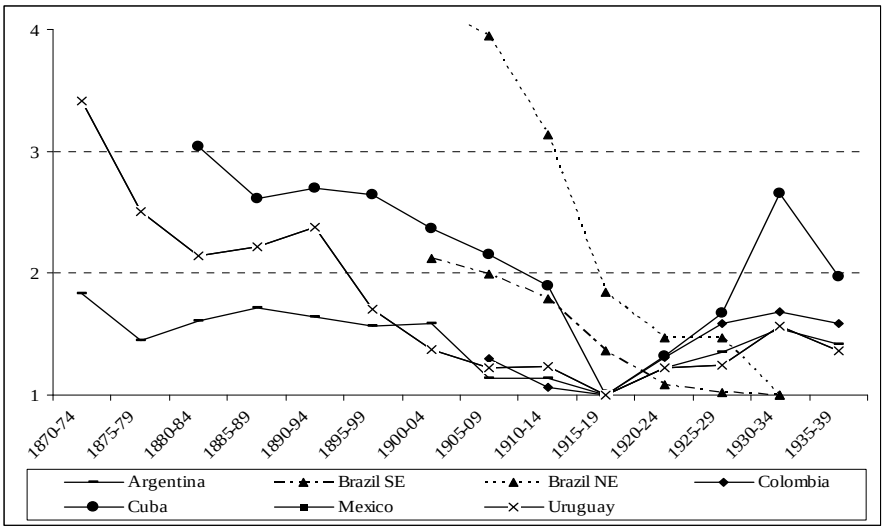
Source: Tables 3 and 4 from Williamson, J. (2002) Land, Labor and Globalization in the Third World 1870-1940, *Journal of Economic History*, Vol. 62, No. 1, pp. 73-4; See also Bertola and Williamson (2006), p. 51.

Williamson has shown that the land abundant NWC's witnessed a decrease in wage-rental ratios until the First World War. In Australia and the USA the turning point lies around 1910 and 1915 respectively. Argentina and Uruguay reveal a turning point in the years 1930-1934, but the great decline in the wage-rental ratio takes place before 1919. The rise of the wage-rental ratio after 1934 continues in Argentina at least until 1939 and in Uruguay, as Bértola has shown, until the early 1970's (Bértola 2005). In comparative perspective, the decrease in the wage-rental ratio in Argentina and Uruguay between 1870 and 1919 is considerably more

pronounced than in the USA and Australia.[79] In Uruguay the decrease was sevenfold and in Argentina even tenfold. Hence, the impact of globalisation on the distribution of income appears to be large.

For a wider set of LAC's Williamson (1999) calculated ratios of the real urban unskilled wage versus GDP per capita. This is a more comprehensive measure of factor income distribution, since the denominator not only captures land rents, but also the impact of trends in capital income and skill-premiums. The basic idea behind this measure is that it answers the question to which extent low-skilled labourers benefitted from (and contributed to) the overall welfare gains. The time series for Argentina, Brazil (subdivided into the Northeast and Southeast areas), Colombia, Cuba, Mexico and Uruguay are shown in figure 6.2. The minimum level of the wage-GDP ratio observed is set at one.

Figure 6.2: Trends in the ratio of real urban unskilled wages over GDP per capita in Argentina, Brazil, Colombia, Cuba, Mexico and Uruguay, 1870-1939 (Index figures, lowest observation = 1.00)



Source: Table 8 from Williamson, J. (1999) Real Wages, Inequality and Globalization in Latin America before 1940, *Revista de Historia Económica*, Vol 17, p. 101; See also Bértola and Williamson 2006, p. 54.

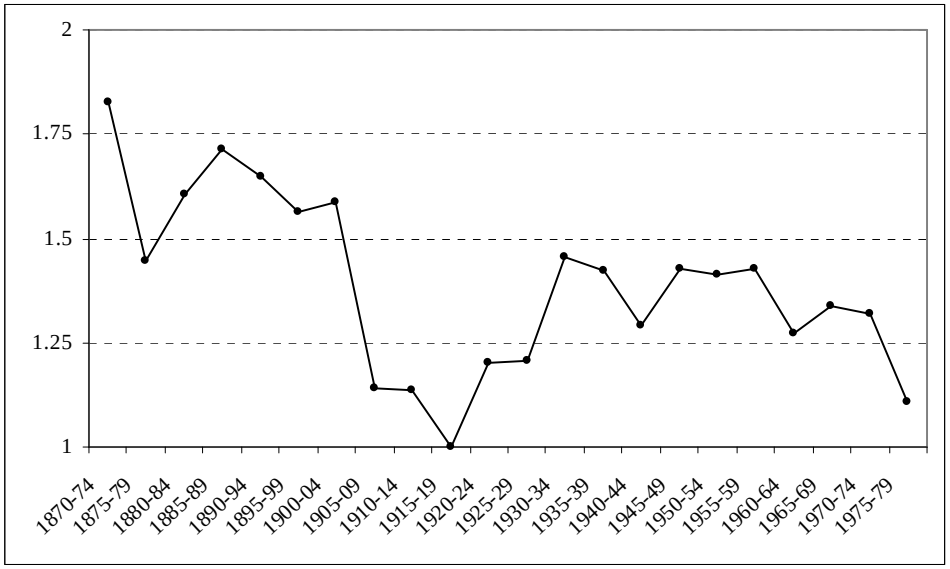
A comparison with figure 6.1 reveals that the pattern observed in the wage-rental ratio largely coincides with the wage-GDP ratio, but not completely. In five of the seven cases the trend turns after the years 1915-1919. In the case of Argentina and Uruguay this has come one decade earlier than the turning point in the wage-rental ratio (although the relative decline of the latter in the 1920's was negligible). Only in the case of Brazil the decline of the wage-

[79] The wage-rental ratio in both LAC's also decreases faster than in land abundant Punjab, Egypt and Burma. Of all the developing countries observed the total decrease is only larger in Siam (Thailand).

GDP ratio continued at least until the mid 1930's (where the time-series stops). Compared to the wage-rental ratios in Argentina and Uruguay, the decline in the wage-GDP per capita ratio is more modest and the upward trend after 1919 is more pronounced. The timing of these turning points and the observed cross-country differences need to be explained.

Time-series of average wages in Argentina obtained from the historical statistics of the *Instítuto de Estudios Económicos sobre la Realidad Argentina y Latinoamericana* allow for an extrapolation of Williamson's series from the year 1913 onwards (IEERAL 1986). The graph presented in figure 6.3 shows that after 1934 the ratio remains more or less at par until the late 1950's (with the exception of the war years 1940-1944). From the early 1960's to the mid 1970's the wage-GDP ratio declined modestly. This extended view indicates that the amplitude of the wage-GDP trend between 1870 and 1940 is much larger than after 1940. The turning point around 1919 really appears to represent a *major* trend break.

Figure 6.3: The ratio of the average nominal wage over GDP per capita in Argentina, 1870-1979



Source: IEERAL (1986) *Estadisticas de la Evolucion Economica de Argentina. 1913-1984*, Cordoba

The problem here is that the timing of this trend break does not raise support for the globalisation hypothesis. After all the big collapse in exports did only occur in 1929 in Latin America, and certainly in Argentina. Whereas exports suffered from the Great Depression in the 1930's, Argentina managed to expand its exports during the 1920's in comparison with the years before 1913 (Bulmer-Thomas 2003: pp. 163-4). Hence, a trend break in the early 1920's is difficult to reconcile with a perceived impact of de-globalisation. Government intervention in the relationship between labour and capital is a likely alternative to explain the

marked increase in the wage-GDP ratio (Galiani and Gerchunoff 2003: p.131). In this respect it is also interesting to note that the wage-GDP ratio in Brazil (figure 6.2) declined at least until the mid 1930's, which corresponds with the comparatively weak position of the labour movement and strong position of the land based elite in this country, rather than a diverging impact of global market forces in comparison to Argentina, Uruguay, Mexico or Colombia.

6.3 Urban wage differentials in comparative perspective, 1870-1940

During the period 1870 and 1940 the relative weight of urban wages in the income distribution increased markedly. Structural change led to an increasing number of urban wage workers and the increase in the wage-GDP trend since the 1920's further raised the relative weight of urban wages in the functional income distribution framework. Hence, it is crucial to get some idea of the extent of urban wage stretching to evaluate the impact of this trend on overall levels of interpersonal income inequality. For the investigation of urban wage inequality in Latin America before 1940 we have to rely on a set of scattered sources for a limited number of countries and benchmark years. Among these, industrial surveys are the most widely available source of internationally comparable wage data. The sources that are used in this section and the next are listed in the appendix table A.7.3. A more detailed discussion of the pro's and contra's of using industrial wage data time series for inequality trend analyses is provided in chapter seven (section 7.4)

Industrial survey data allow the calculation of various standardised measures of manufacturing wage inequality in the early 20th century. Table 6.1 presents the average annual wage (μ_{xi}) in the industrial sector in six countries (x) in year (i), the standard deviation of wage differences (σ_{xi}) over n numbers of industries (or sectors) (varying per country from 13 to 17 sectors) and the coefficient of variation (σ_{xi}/μ_{xi}). The different number of industries partly reflects actual differences in the respective countries' sector structure and, for another part, the adoption of different industrial classification schemes. However, the most common manufacturing industries such as foodstuffs, beverages, textiles, leather, wood, paper, printing, chemicals, non-metal minerals (glass, stone, clay, ceramics etc.), metals and machinery were covered in all the surveys used here. Public utilities were present in a few surveys and were excluded from the estimation to avoid the potential bias of this sector in the estimation of wage differentials. In the case of Argentina in 1917 daily wages were recorded in stead of annual wages. Since there is no clear conjecture about the potential comparative bias this may cause, nothing has been undertaken to correct for this.

Although the degree of comparability is not as optimal as one would wish, the results of do suggest that manufacturing wage inequality was somewhat higher in Latin America than in the rest of the New World before 1920, with a coefficient of variation between 0.22 and 0.30 in Argentina, Brazil and Chile and between 0.15 and 0.19 in the USA, Canada and Australia. Yet, compared to present-day manufacturing wage differentials the wage gaps as well as the cross-country variation appear to be very modest. This point will be more extensively addressed in chapter seven (section 7.4).

Table 6.1: Inter-industry wage differentials in the manufacturing sectors of Argentina, Chile, Brazil, USA, Canada and Australia, 1910-1920

	Year	Currency	No. of sectors	Mean wage	Stand. Dev	**Coeff. Var.**
Argentina*	1917	Peso m/n	13	3.31	0.74	**0.22**
Brazil	1920	Real	13	1606	477	**0.30**
Chile	1916	Peso	14	627	188	**0.30**
USA	1914	USD	16	579	85	**0.15**
Canada	1910	CAD	15	419	84	**0.19**
Australia	1912	AUS Pound	17	115	20	**0.18**

Sources: See appendix table A.7.3.
Note: *For Argentina the figures refer to daily wage differentials in the capital city and province of Buenos Aires, in stead of nation-wide annual wages.

In some cases the industrial surveys also recorded information on differences in pay between various skills (blue collar - white collar), occupations or sexes. Calculations of skill-premiums and gender wage differentials show that some of the observed LAC's compare quite well with the sample of NWC's.

The so-called "white-collar premium" measures the ratio of the average salary of the white collar employee over the average wage of blue collar workers. In Argentina in 1913 this ratio was 1.71 in the industrial sector and 1.74. in the commercial sector, including retail and wholesale establishments (Minesterio de Agricultura 1914). By comparison, in Canada in 1905 and 1925 we find ratio's of 1.85 and 1.90 respectively. In Australia in 1923 we find a white-collar premium of 1.67. In Chile in 1925 the average white-collar employee earned 3.01 times as much as the average blue collar worker, which was notably higher. Yet, between 1925 and 1937 the white-collar premium declined considerably to 1.99,, which is much more in line with the other countries observed. The first industrial census of Colombia of 1945 records a white-collar premium of 2.75, which is distinctively higher than in Chile and Argentina at that time.

Whereas white-collar premiums are primarily based on differences in occupational tasks and worker qualifications, gender wage differentials also contain a discriminatory component. Female wage discrimination occurs when females are paid lower wages for identical jobs. The data do not allow for a distinction between these two factors, but they do

provide a short impression of the relative extent of gender wage differentials in LAC's as compared to the NWC's (i.e. unadjusted for the type of jobs involved): in Chile in 1909 we find a ratio of 2.16, compared to 2.10 in New Zealand in 1906, 1.99 in Canada in 1905 and 2.41 in Australia in 1912. In Argentina in 1917 the average male daily wage of 3.70 pesos compared to 2.26 pesos for the average female daily wage, which results in a "male-premium" of 1.64. In Brazil in 1920 the average gender wage gap was reported to be 68%.[80]

Hence, from an international comparative perspective gender wage differentials in Latin America appear to have been relatively modest in the early 20th century. This conclusion is supported by the research of Camps et al. (2006) showing that gender wage differentials in Latin America later in the 20th century are considerably smaller than in East Asia.

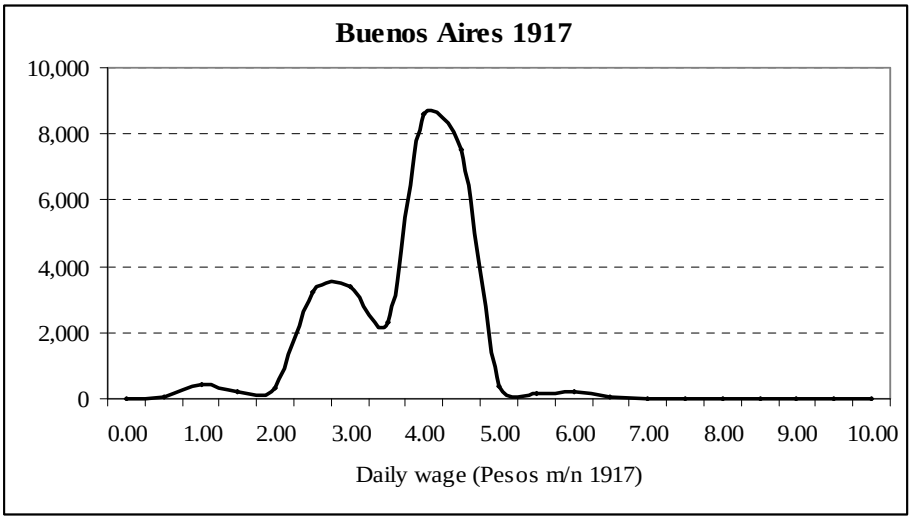
A more detailed insight in the extent of wage stretching in Argentina can be obtained from the *Estadistica de Salarios* of 1917. This unique source reports daily wages of 32,583 male and 7,638 female industrial employees of 16 years and older working in the province of Buenos Aires. The broad coverage of the types of workers (age, sex, sector, occupational status) reveals the entire structure of labour remunerations: distinctions are made between minors (*menores*), apprentices (*aprendices*), assistants (*ayudantes*), unskilled day labourers (*peones*) and various types of skilled workers such as specific craftsmen, engineers (*mecanicos*), machine workers (*maquinistas*), supervisors of machine workers (*jefe de maquina*), superintendents (*capataceses*) and clerks (*empleados*), to mention the most common examples. This source contains too much detail for a survey discussion like this, but it also offers the opportunity to analyse the wage distribution of industrial employees from an aggregate perspective.

Figure 6.4 presents the distribution of industrial wage earners according to daily wage levels in Buenos Aires. The graph shows a concentration of wages in the range of 2.00 to 5.25 pesos. The average daily wage of all workers (including male and female) is 3.44 pesos. At the left-hand end of the distribution we find minors working as packers (*empaquetadores*) earning a daily wage of 0.6 to 0.8 pesos, while the superintendents earned wages in the range of 6 to 9.5 pesos. Apprentices and assistants usually earned between 1 and 1.5 pesos per day. The wages of unskilled day labourers (*peones*) varied around 2.8 pesos on average for an adult male. A carpenter earned between 4 and 6 pesos per day, whereas male clerks earned 6.3 pesos on average. The twin-peaks structure of the distribution reflects the wage gap

[80] It should be noticed that the regional differences in nominal wages in Brazil are much higher than the gender wage differentials. The daily wages of adult male carpenters in various rural areas across the country range from 5 Real in the poorer districts of the North to between 10 and 13 Real in the more developed urban areas of the South such as Rio de Janeiro, Minas Gerais and Sao Paulo (Instituto Nacional de Estatistica 1937: p. 434).

between both sexes as well as the large group of unskilled day labourers and skilled blue-collar workers (*obreros con oficio*).

Figure 6.4: The distribution of industrial wage earners according to daily wage levels, Buenos Aires 1917



Source: Ministerio del Interior (1919) *Anuario Estadistico. Estadistica de Salarios 1917 Capital Federal*, Departamento Nacional de Trabajo, Buenos Aires, pp. 9-58

The corresponding decile distribution of wage earners enables the calculation of a Gini-coefficient of wage inequality as shown in table 6.2. The outcome, a Gini-coefficient of 0.12, may strike us as surprisingly low. In this respect it should of course be emphasized that this result relates to nominal wages in a confined urban area, where consumer price differences play a minor role. Nevertheless, given the fact that the majority of the urban population is concentrated in Buenos Aires it does indicate that industrial wage inequality is very unlikely to be a major source of high income inequality in Argentina in the early 20th century.

Table 6.2: The decile distribution of urban wage income, Buenos Aires 1917

Deciles of wage earners	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	**Gini**
% of total wage income	5.5%	7.1%	8.4%	9.7%	10.9 %	11.1 %	11.3 %	11.5 %	11.5 %	12.9 %	**0.118**

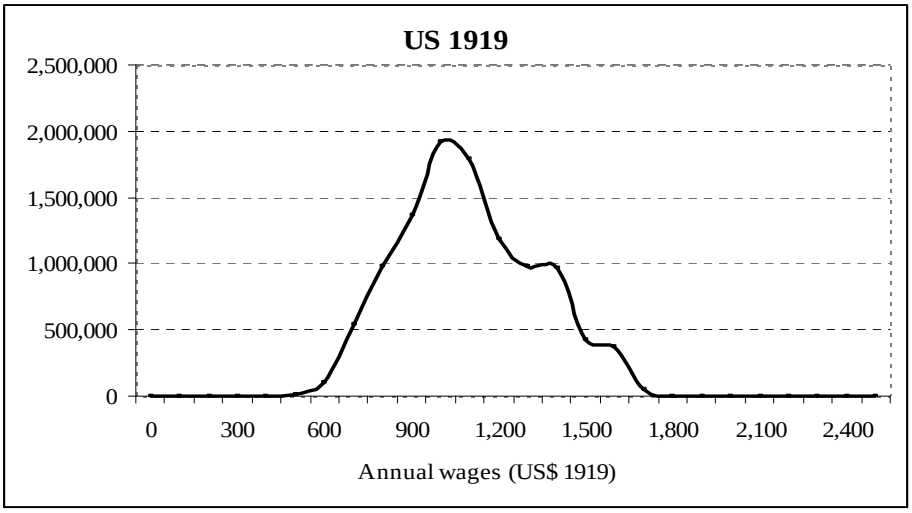
Source: Ministerio del Interior (1919) *Anuario Estadistico. Estadistica de Salarios 1917 Capital Federal*, Departamento Nacional de Trabajo, Buenos Aires, pp. 9-58

To place this result in perspective it is helpful to consider some figures on the industrial wage distribution in the US, even though its coverage is not completely comparable. The US industrial census of 1919 covers the annual wages of 10.7 million workers in no less than 350 different industries in the entire country, which reflects the larger diversification and regional spread of industrial activities in the USA as compared to Argentina. Yet, the US survey does

not include occupational wage information within each trade. Figure 6.5 presents the graph of the industrial wage distribution in the United States in 1919. Annual industrial wages in the US appeared to be concentrated between 600 to 1800 US dollars, which gives a ratio of 1:3, a little wider than the 1:2.6 observed for Buenos Aires. The absence of a twin-peak structure in the wage distribution is probably the consequence of the absence of within-industry wage differentials. The Gini-coefficient corresponding to the 1919 US wage distribution is 0.209.

The low level of wage inequality in both countries becomes apparent when recalling the estimates of British skill-premiums and Gini-coefficients of male employed workers in the 19th and early 20th century computed by Williamson (1991). Based on labour income information of eighteen different occupations (six unskilled and twelve skilled occupations), the weighted average wage gap between skilled and unskilled workers in Britain during the industrial revolution stood at 1 to 3.8 at its maximum around 1850 (1991: p. 62), while the white-collar premium is reported to have been 3.45, which clearly exceeds the level of any of the observed LAC's. Moreover, the Gini-coefficient of labour earnings of male employed workers in 1850 was 0.358 and this measure had only marginally declined to 0.331 in 1901. Hence, the conclusion that urban wage inequality in Buenos Aires in the early 20th century was modest by international standards seems justified.

Figure 6.5: The distribution of industrial wage earners according to annual wage levels, USA 1919



Source: Department of Commerce (1923) *Abstract of the Fourteenth Census of the United States*, Bureau of the Census, Washington, Table 88, pp. 1157-67

For the interwar years the sample of countries included in the comparison can be enlarged with Colombia, Mexico, Peru, Uruguay and New Zealand. Table 6.3 presents the average annual wage, the standard deviation and the coefficient of variation for eleven countries in a

benchmark year between 1925 and 1945. The number of industries included ranges from 16 (US and Australia) to 22 (Argentina). Apart from the small deviations in the number of sectors these figures are comparable with the figures for the years 1910-1920 presented in table 6.1.

Table 6.3: Inter-industry wage differentials in the manufacturing sector of Argentina, Brazil, Chile, Colombia, Mexico, Peru, Uruguay, USA, Canada, Australia and New Zealand, 1925-1945

	Year	Currency	No. of sectors	Mean wage	Stand. Dev	**Coeff. Var.**
Argentina	1937	Peso m/n	22	1,513	383	**0.24**
Brazil	1939	Real	20	2,469	604	**0.24**
Chile	1925	Peso	17	2,499	602	**0.23**
Colombia	1945	Peso	17	779	276	**0.35**
Mexico	1930	Peso	18	568	347	**0.52**
Peru*	1933	Soles	9	846	171	**0.20**
Uruguay	1930	Peso	19	487	84	**0.17**
USA	1935	USD	16	1,023	210	**0.19**
Canada*	1935	CAD	9	852	106	**0.12**
Australia	1935	AUS Pound	15	167	34	**0.17**
New Zealand	1935	NZ pound	18	207	42	**0.19**

Sources: See appendix table A.7.3.

The coefficients of variation in Brazil in 1939 (0.24) and Chile in 1925 (0.23) were considerably lower than in, respectively, 1920 (0.30) and 1916 (0.30). In Argentina in 1937 the figure had increased slightly in comparison to 1917, from 0.22 to 0.24, but this may very well relate to the wider coverage of the 1937 census. In the US the figure of 0.19 in 1935 compares to 0.15 in 1914 and in Australia the figure of 0.17 in 1935 compares to 0.18 in 1912. The 0.17 recorded for Uruguay in 1930 was the lowest of all LAC's included in this sample. The figures for Peru (0.20) and Canada (0.12) have to be interpreted with some care, since they relate to only nine sectors, which probably, but not necessarily,[81] understates the comparative level of manufacturing wage inequality.

Altogether these results suggest that during the 1930's industrial wage differentials in Latin America were neither extremely high nor extremely low in comparison to the NWC's. However, the coefficient of variation of Colombia (0.35) clearly deviated from the general pattern, whereas the 0.52 of Mexico in 1930 can be considered as "extraordinary high". Wage

[81] When calculating the level of wage inequality in the US among the nine sectors listed in the Canadian census, the coefficient of variation is 0.20, which is actually slightly higher than the 16 sector presented in table 6.3! A lower number of sectors does not necessarily result in a compression of the observed wage gaps. It crucially depends on whether the sectors at the low and top end of the distribution are separately included or not. Combining sectors in the middle of the distribution can have an enlarging effect on the variation measured by the coefficient of variation (this is what happened with the US 9-sector estimate).

gaps in the latter country were especially caused by the ceramics, leather and food industries at the lower end and the oil refining and graphic industries at the outer end.

There is additional support for the view that, *within* Latin America, country-specific wage differentials varied largely during the interwar years. A wage survey of October 1938 lists the hourly wages of 30 different occupations in eight different sectors in six major cities: Buenos Aires, Santiago de Chile, Bogotá, New York, Sydney and Ottawa (Migone et.al. 1940: pp. 419-24). The wage data refer to detailed job descriptions, a strictly demarcated geographical area, and also explicitly distinguishes unskilled and skilled occupations. This survey thus offers the possibility to calculate wage differentials and skill-premiums controlled for the type of occupation and the sector of employment. A disadvantage of this source is that for the coverage for New York is incomplete. Table 6.4 compares the levels of wage inequality among all the listed type of occupations as well as among eight types of workers in the construction sector.

Table 6.4: Average hourly wage differentials in Buenos Aires, Santiago de Chile, Bogotá, New York, Sydney and Ottawa, October 1938

		No. of occup.	Mean wage	Stand. Dev.	**Coeff. Var.**
			All industries		
Buenos Aires	Peso m/n	27	0.92	0.26	**0.28**
Santiago	Peso	30	1.85	0.51	**0.27**
Bogota	Peso	29	0.24	0.14	**0.60**
New York	USD	16	1.45	0.44	**0.31**
Sydney	Aus pence	29	27.82	3.83	**0.14**
Ottawa	CAD	29	0.59	0.18	**0.30**
			Construction industry		
Buenos Aires	Peso m/n	8	0.11	0.85	**0.13**
Santiago	Peso	8	0.22	1.75	**0.13**
Bogota	Peso	8	0.06	0.21	**0.30**
New York	USD	8	0.29	1.73	**0.17**
Sydney	Aus pence	7	4.54	29.93	**0.15**
Ottawa	CAD	8	0.19	0.73	**0.27**

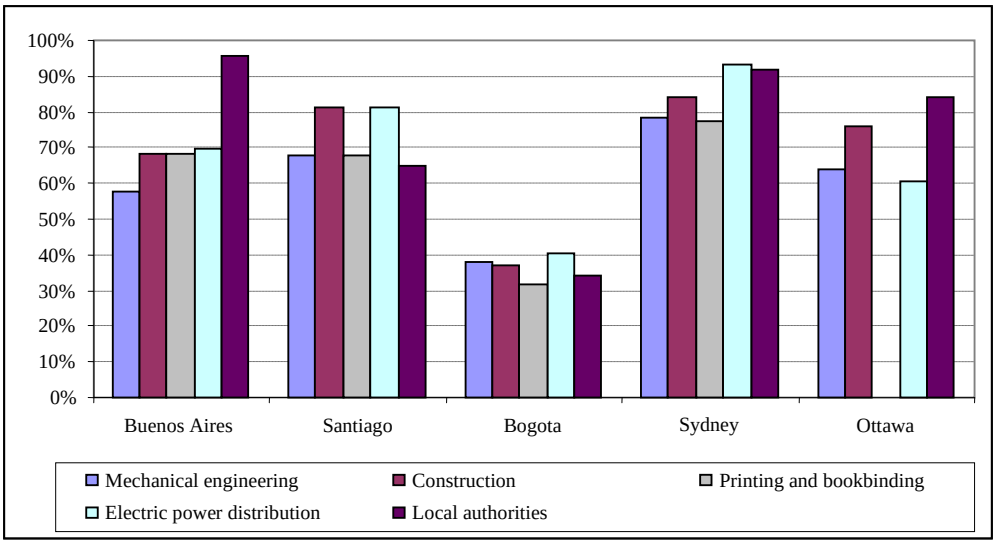
Source: Migone, R.C., Aberastury, M., Fuente, E., Iturraspe, J.E. (1940) *Interamerican Statistical Yearbook 1940*, Macmillan: New York; Freitas Bastos: Rio de Janiero, pp. 419-24
Note: The eight occupational categories are 1) mechanical engineering, 2) construction, 3) furniture making, 4) printing and bookbinding, 5) bakery, 6) electrical power distribution, 7) transport and 8) local authorities; the eight types of construction workers are 1) bricklayers and masons, 2) structural iron workers, 3) concrete workers, 4) carpenters and joiners, 5) painters, 6) plumbers, 7) electrical fitters and 8) unskilled labourers

Table 6.4 shows that in the Latin American capital cities Buenos Aires (0.28) and Santiago de Chile (0.27) the estimated levels of wage inequality were comparable to New York (0.31) and Ottawa (0.30), whereas in Sydney the inter-industry wage differentials appeared to have been markedly smaller (0.15). Second, and also in line with the results shown in table 6.3, Bogotá was a true outlier with a coefficient of variation of 0.60. When we compare the differences in

pay between eight different occupations in the construction industry, Buenos Aires and Santiago de Chile again compare quite well to New York and Sydney, while Bogotá and Ottawa deviate from the general pattern.

In five out of eight sectors the daily wage levels of unskilled labourers were explicitly reported. Figure 6.6 shows these unskilled wages as a percentage of the total average wage level observed in the survey. In four of the five cities the unskilled wages were typically around 60 to 90% of the average wage. Such figures were also recorded in Uruguay in 1930 (Ministerio de Industrias y Trabajo 1955). These findings suggest that the comparatively high levels of inter-industry wage inequality in Bogotá were also reflected by high levels of wage inequality between skilled and unskilled workers within each sector.

Figure 6.6: Hourly wage of unskilled labourers in five industries as a percentage share of the observed average wage in Buenos Aires, Santiago de Chile, Bogota, Sydney and Ottawa, October 1938



Source: Migone, R.C., Aberastury, M., Fuente, E., Iturraspe, J.E. (1940) *Interamerican Statistical Yearbook 1940*, Macmillan: New York; Freitas Bastos: Rio de Janiero, pp. 419-24

The *Compendio de Estadisticas Historicas de Colombia* (Urrutia Montoya and Arrubla 1970) offers further support for the conclusion that skill-premiums in Bogotá (and probably Colombia as a whole) were significantly higher than Argentina and Chile in the 1930's. The daily and monthly wages of blue-collar workers and white-collar employees engaged in public administration show that unskilled labourers (*peones*) earned around 45% of the monthly salary of the average clerical worker, which is more or less in line with the levels presented in figure 6.6.

In sum, in most of LAC's observed here, and especially the southern cone countries, urban wage differentials were not markedly higher than in the rest of the New World before 1940. Where they were any larger before 1920, as in Brazil and Chile, these wage gaps diminished in the 1920's and 1930's. The Gini-coefficient of wage inequality in Buenos Aires in 1917 indicates that wage inequality was certainly not a major cause of high levels of personal income inequality, on the contrary. An increasing share of urban labour income in the overall national income, for example due to the rise of real unskilled wages relative to land rents (as shown in section 6.2), has had a curtailing effect on total income inequality, ceteris paribus. In Mexico and Colombia higher levels of wage inequality were found, indicating that the intra-regional differences in the structure of the functional income distribution were large. Additional research is needed to account for this notable difference. We may think of various possible explanations of which I find the following the most convincing. The relative abundance (scarcity) of unskilled labour in Mexico as compared to such countries as Argentina, Brazil, Chile and Uruguay kept down the relative levels of real urban unskilled wages, while the absence of a large pool of unskilled labour in the latter countries reduced the gap. Second, Mexico was and still is characterised by large regional economic disparities, which may have been translated in a larger inter-industry dispersion of wages. This argument especially holds when we compare Mexico to the much more homogenous economies of Argentina or Uruguay, but fails to hold when compared to Brazil for instance. Moreover, this argument definitely fails to explain why wage inequality in Bogotá was significantly higher than in Santiago de Chile. All together it just seems that the rewards for labour in the Southern cone countries were remarkably evenly distributed before 1940.

6.4 The capital intensity of production before 1950

In 1940 the share of urban wages in national income was considerably higher than in 1870 and the share of land rents had declined. What about the share of capital income? An increasing stock of capital per worker is one of the main pillars of modern economic growth. The investments in machinery and transport equipment in rural and urban industries together with the expansion of transport and communication infrastructure (railways, ports, telegraph) fundamentally changed the organisation of production and trade in Latin America.

To analyse the distributive consequences of capital accumulation one would, ideally, want to trace the changes in the relative share of capital income in national income as well as the distribution of capital income *per se* (the latter depending on the ownership structure of capital). Yet, the scarcity of this kind of (historical) information is notorious in inequality studies (Atkinson 1997). One of the most promising venues to tackle this issue is to focus on

trends in taxation. Tax assessments usually differentiate between various groups of tax payers and this enables the distinction between various categories of income earners. Assuming that in the top income groups a large share of income consists of capital rents and entrepreneurial profits, the movements in top incomes tell us something about the impact of changes in capital income in the overall distribution of income (Lindert and Williamson 1980, Soltow and van Zanden 1998, Picketty 2003 and 2006). For this research project an analysis of country-specific tax assessments was not feasible. Yet, besides practical considerations, this approach is also less useful for the specific case of Latin America, because its tax systems heavily leaned on tariff revenues rather than wealth or factor income taxes (Engerman and Sokoloff 2005).[82]

When dropping the pretension that we could actually quantify something like "a capital income distribution" in the way it was done for wage income in the previous section, we can start looking for more impressionistic methods to get a feel for the role of capital in early 20th century Latin American income inequality. Historical literature complemented by various quantitative sources can, at least, tell us something about the comparative capital-intensity of production, the extent of concentration of capital ownership and the relative shares of labour and capital income in the industrial sector.

When assessing the distributive characteristics of non-residential capital formation since 1870 it is useful to make a crude distinction between capital investments related to the export sector and investments in the domestic market oriented sectors. The first type of investments, which constituted the bulk of fixed capital formation before 1929, was primarily channeled towards transport infrastructure and equipment linking the *latifundias* to the world market. Before the Great Depression a large share of these investments were either directly conducted by foreign investors of European (mainly British) and North American origin, or indirectly, with the help of foreign financial institutions (Taylor 2003: p. 174). Especially the development of the railway system, requiring enormous sums of capital, depended on overseas capital markets complemented by domestic public funds (Summerhill 1998 and 2006). This implied that a large part of the capital rents (in case they were positive) was transferred to foreign investors and had no impact on the national distribution of income.

For the capital investments related to the domestic market the picture is harder to assemble and probably more complicated. Some data from industrial surveys may nevertheless help to derive some tendencies. Table 6.5 shows the number of workers per

[82] According to Engerman and Sokoloff the development of typical Latin American tax institutions is directly related to the colonial heritage of inequality. Since a great deal of national wealth was concentrated in the hands of an overlapping political and economic elite the incentives to tax wealth and property income were adverse. The taxation of trade, and specifically imports, shifted the burden to consumers of imported commodities.

establishment and the amount of horse power installed per worker in the industrial sector (see the last two columns of the table) in the most advanced industrial LAC's and three NWC's between 1895 and 1939. These figures offer a crude impression of the comparative size and capital-intensity of industrial production. Table 6.5 shows that in terms of establishment size and installed horse power capacity industrial firms in LAC's were, on average, smaller and less mechanized than in the NWC's (Lewis 1986, Haber 2006).[83]

Table 6.5: Four measures of relative capital intensity of the industrial sector in Argentina, Brazil, Chile, Mexico, Uruguay, USA, Canada and Australia, 1895-1939

	year	Establishments	Workers	horse power installed	workers per establishment	horse power per worker
Argentina	1895	24,114	174,782	60,033	7.2	0.34
	1913	48,779	410,201	678,757	8.4	1.65
	1935	37,362	437,816	1,026,086	11.7	2.34
Brazil	1920	13,336	275,512	310,424	20.7	1.13
	1939	49,418	781,185		15.8	
Chile	1910	5,267	71,060	59,059	13.5	0.83
Mexico	1930	48,850	318,763	1,116,594	6.5	3.50
Uruguay	1930	7,083	70,482		10.0	
USA	1914	271,822	7,015,136	22,264,343	25.8	3.17
	1925	187,390	8,384,261	35,772,628	44.7	4.27
	1935	169,111	7,378,845	42,869,393	43.6	5.81
Canada	1910	19,218	471,126		24.5	
	1925	22,331	544,225	2,888,164	24.4	5.31
	1935	24,450	567,416	4,346,775	23.2	7.66
Australia	1912	14,707	310,167	389,840	21.1	1.26
	1923	20,189	429,990	1,110,774	21.3	2.58
	1935	24,894	492,771	2,146,889	19.8	4.36

Source: See appendix table A.7.3

There is ample empirical literature showing that the real surge in industrial capital accumulation has taken place in the period between 1940 and 1980. Before 1940 scale-intensification occurred particularly in the raw materials and food exporting sectors such as the sugar, coffee and meat industries and in oil, nitrates and metals. In the industries producing for the domestic market, such as the brewing, cement and cotton and textiles industries, the number of establishments employing more than hundred workers also increased (Lewis 1986, Haber 2006), whereas industrial surveys show that glass and paper industries expanded in size to between 20 and 50 workers per establishment. An analysis of

[83] These figures are in line with those presented by Lewis (1990: pp.36-7 and 299, see also Haber 2006: p. 546), who shows that the amount of workers per establishment in Argentina increased until 1943 (13.7) and thereafter started to decrease modestly to 12.1 in 1974. According to Lewis the amount of horse power per worker in Argentina increased from 0.2 in 1895 to 2.4 in 1939 and further to 4.4 in 1974.

textile machinery imports in Brazil and Mexico shows that the expansion of one of the prominent domestically oriented industrial sectors before 1940 was substantial, but incomparable to the pace observed in the advanced industrialising countries in Western Europe, Japan and the New World (Haber 2006: p. 555 and 559). Figures for Argentina, the most advanced Latin American economy in the early 20th century, show that investments in the industrial started to increase rapidly after 1940 (Taylor 2003: p. 171 and 186).

Hofman's research (1998) on comparative levels of capital stock provides a more comprehensive view of the relative capital-intensity of Latin American economies. The earliest year for which Hofman's aggregate capital stock estimates are available is 1950. Table 6.6 shows the comparative levels of the three components of the capital stock (expressed in per capita levels) in Argentina, Brazil, Chile, Colombia, Mexico and Venezuela relative to the USA. The per capita capital stock levels are denoted in international dollars of 1980.

Table 6.6: Relative levels of capital stock per capita in Argentina, Brazil, Chile, Colombia, Mexico, Venezuela and USA, 1950 (international dollars 1980)

1950	Total capital stock per capita	*% USA*	Infrastructural capital per capita	*% USA*	Machinery & equipment per capita	*% USA*	Residential capital per capita	*% USA*
Argentina	6,415	*0.25*	2,168	*0.18*	685	*0.12*	3,562	*0.41*
Brazil	1,235	*0.05*	346	*0.03*	406	*0.07*	483	*0.06*
Chile	6,096	*0.23*	3,494	*0.29*	721	*0.13*	1,881	*0.22*
Colombia	3,596	*0.14*	2,238	*0.19*	262	*0.05*	1,095	*0.13*
Mexico	2,231	*0.09*	1,483	*0.12*	248	*0.04*	500	*0.06*
Venezuela	5,132	*0.20*	2,362	*0.20*	2,191	*0.40*	579	*0.07*
USA	26,168	*1.00*	11,967	*1.00*	5,536	*1.00*	8,665	*1.00*

Source: Hofman, A. (1998) *Latin American Economic Development. A Causal Analysis in Historical Perspective*, Groningen Growth and Development Centre Monograph Series, No. 3, University of Groningen, pp. 92-3

Expressed as a percentage share of the USA, the total per capita capital stock of Argentina in 1950 is 25%, in Chile 23%, in Venezuela 20%, in Colombia 14%, in Mexico 9% and in Brazil 5%. In four of the six LAC's the shares of machinery and equipment are even substantially lower, only slightly higher in Brazil (7%) and substantially higher in Venezuela (40%).[84] In other words, there was a comparative bias towards infrastructural and residential capital as opposed to investments in machinery and equipment. Hence, the composition of the capital stock in 1950 still reflected the traits of the old export economy, rather than the increasing capital intensity of the emerging industrial economy.

[84] The lion-share of the machinery and equipment investments in Venezuela had taken place in the disproportionately large oil sector (Hofman 1998: pp. 47-8).

Hofman's estimates further indicate that, in the years between 1950 and 1980, the per capita stock of machinery and equipment increased at such a speed that the LAC's accomplished a considerable catching-up with US levels. For instance, the relative share of Argentina versus the USA increased from 12 to 20%, the Brazil-US share rose from 7 to 14% and the Mexico-US share even jumped from 4 to 20%. Yet, during the recession of the 1980's investments in machinery and equipment plunged and a large part of the gained terrain was lost again.

Now that an impression of the dimensions and timing of industrial capital formation in the 20th century has been obtained, the question arises whether it is possible to get some impression of its distributive implications as well. The logic of Kuznet's hypothesis is based on the idea that in the early stages of the industrialisation process a new type of economic dualism occurs, which has a polarizing effect on the distribution of income between the rural and urban as well as within the urban economy (Kuznets 1955). The introduction of new industrial production techniques sharpens the contrast between rural and urban means and methods of production as it also sharpens the contrast between traditional artisan trades, producing their handicrafts in small workshops (*obraje*) on the basis of "old fashioned" or obsolete technologies, and capital-intensive enterprises using modern technologies in a factory-system. Yet, a certain level of dualism in the organisation of industrial capitalist production is characteristic for all industrialising countries (Chandler 1990). The industrial sectors in LAC's were no exception to that rule. The real question is, were there any specific Latin American features which more strongly emphasized the dualist nature of industrial production? From a historical perspective there are at least two reasons why this indeed may be the case.

First, the largest industrial profit potential resided in resource-intensive industries. In these industries the possibilities for large-scale investments often were the exclusive privilege of those who controlled the key (mineral) resources and disposed of the financial means and the political network that were necessary to built up an industrial imperia. In an institutional environment promoting liberal entrepreneurship, yet maintaining market imperfections and assisting social and political discrimination, increasing outlets for profitable investments easily lead to a large concentration of industrial capital in the hands of a small group of investors-entrepreneurs.

The second reason is intimately related to the former argument. The facilities to set up industrial enterprises from scratch remained underdeveloped. Access barriers to education and capital loans were prohibitive for a large part of the population and the connections needed to overcome bureaucratic and legal hurdles remained beyond reach for many would be entrepreneurs as well. This is not to suggest that there were no chances to set up and develop

manufacturing firms, but rather that in a political and economic climate where monopolistic control prevails, the incentive structure is likely to induce a certain degree of polarisation in private industrial capital formation.

If this was the case, such would be revealed, at least to some extent, in inter-industry labour productivity differentials and this is an indicator we can obtain some data for as well. Table 6.7 shows the manufacturing sector labour productivity differentials in five LAC's and three NWC's in several benchmark years between 1913 and 1939. The table further presents the ratio of energy expenses over the compensation of employees and the compensation of employees as a percentage share of total value added. These three indicators tell something about the relative labour, energy and capital-intensity of production. They also give an impression of the relative share of the factor capital as compared to the factor labour in total manufacturing value added.

Table 6.7: Inter-industry labour productivity differentials in the manufacturing sector and the relative shares of energy and labour expenses: Argentina, Brazil, Chile, Mexico, Uruguay, USA, Canada and Australia, 1913-1939

	year	sectors	labour productivity differentials	energy expenses / compensation of employees	compensation of employees / value added
		no.	coefficient of variation	ratio	ratio
Argentina	1913	10	0.29		0.34
	1935	22	0.72	0.25	0.39
Brazil	1920	13	0.35	0.17	0.26
	1939	20	0.58	0.24	0.21
Chile	1910	17	0.43	0.13	0.30
	1925*	17	0.62	0.29	0.32
Mexico	1930	18	0.70	0.20	0.33
Uruguay	1930	19	0.34		0.38
USA	1914	16	0.40		0.41
	1925	16	0.32		0.40
	1935	15	0.45		0.39
Canada	1910	15	0.60		0.35
	1925	9	0.30	0.10	0.44
	1935	9	0.32	0.14	0.43
Australia	1912	17	0.37	0.09	0.56
	1923	19	0.40	0.13	0.51
	1935	15	0.40	0.16	0.44

Source: see appendix table A.7.3.
Note: * In Chile in 1925 only establishments with 10 employees or more are included.

The comparative perspective again raises some interesting observations. The figures show that labour productivity differentials in Argentina, Brazil and Chile were initially lower than in the USA and Australia, but increased to considerably higher levels than in the latter countries during the interwar years. This finding suggests that the industrialisation process in

the LAC's contributed to an increasing extent of dualism in the urban industrial economy. It should further be noted that within Latin America, the productivity differentials during the inter bellum varied largely, for instance between Mexico and Uruguay in 1930.

The contrast between the LAC's and the NWC's also appears in relative labour and energy costs. Despite the fact that the level of installed horse power capacity per industrial worker was lower in all the observed LAC's, the relative expenses for fuels, gas and electricity as opposed to the expenses on wages and salaries (including all other kinds of labour remunerations) were higher than in the three NWC's. The comparatively low share of labour compensation in value added indicates that relative factor income shares in Latin America were biased towards the factor capital.

Apart from the legacy of monopolistic competition, these outcomes are related to a combination of three other factors. First, the level of human capital employed in the production process was lower in the LAC's, resulting in lower relative remuneration levels. Second, and directly related to the former argument, the relative bargaining position of industrial labourers (as opposed to capital owners and employers) in LAC's was weaker than in the NWC's. Third, higher relative shares of capital income reflect higher levels of rent to compensate for higher levels of investment risks.

In sum, the process of capital accumulation, and specifically industrial capital accumulation before 1940, are likely to have created a new type of economic dualism, reflected by relatively large productivity differentials and, consequently, a relatively large polarisation in the ownership of capital. The labour income share in manufacturing value added remained comparatively low. On the other hand, the scale of industrial expansion and capital accumulation remained limited before 1940 and a large part of capital investments were foreign owned. Taking these observations together strong conjectures regarding the effect of industrial capital accumulation on interpersonal income inequality are hard to make. This obviously requires additional and more detailed research.

6.5 Conclusion

During the first stage of modern economic growth in Latin America the structure of the functional income distribution changed fundamentally. This chapter has investigated some of the distributive changes in factor income to assess the conjectures on the personal income inequality trend discussed in chapter five. Such an empirical analysis obviously copes with severe limitations in terms of the number of countries and benchmark years for which comparative historical income data is available, as well as the limited coverage of economic

sectors and production factors in historical sources. Nevertheless, some of the main results may complement the work of Williamson and co-authors on which a substantial part of the unfolded argumentation has relied.

Probably the most important result is that, from an international comparative perspective, the levels of urban wage inequality appear to have been relatively modest in a considerable number of LAC's, and in particular in the southern cone countries. Moreover, in some LACs', such as Brazil and Chile, a tendency towards declining wage inequality during the 1920's and 1930's was established. For Mexico and Columbia distinctively higher levels of urban wage inequality were recorded. Understanding the causes of this surprisingly large intra-regional variation requires additional research. My guess is that it primarily reflects differences in the relative surplus of unskilled labour.

The increasing importance of the factor capital in industrial and total economic production is inextricably connected with the process of urbanisation and industrialisation. Increasing rates of capital-intensity were recorded on the basis of industrial surveys. These sources indicated that the amount of installed capacity per worker (i.e. machinery and energy-intensity) lagged considerably behind US levels before 1950. Moreover, in comparison to the USA a larger share of the capital stock consisted of residential and infrastructural capital, rather than machinery and equipment. Given the lower capital and energy-intensity in industrial production, the expenses on energy and the remunerations of the factor capital were comparatively high in relation to the compensation of labour.

The conjectured implications of these results for the secular trend of income inequality before 1940 are as follows: income inequality was not driven by large disparities in wages. Rather, the dichotomy between a select group of large capital owners and an expanding group of unskilled labourers played the pivotal role in the distribution of national income. This type of dualism was present in Latin American rural areas (Bauer 1986), but growing productivity differentials suggest that it also became a major characteristic of the organisation of the urban industrial sector before 1940. Putting both perspectives together, that is the modest levels of wage inequality and the comparatively large discrepancies in the remuneration of labour and capital, the sharp turning point observed in the ratio of real urban unskilled wages versus real GDP per capita around 1919 is a very important result. It strongly suggests that the relative share of the rather evenly distributed labour income in total national income rises, with declining levels of personal income inequality between 1919 and 1940 as the most likely consequence.

This turning point in the secular trend of inequality is the result of a combination of factors, which has occurred only in the economically more advanced LAC's. The period of export led-growth enhanced economic dynamics and structural change. At the eve of the First World War, the traditional colonial outlook of the Latin American economy had changed

dramatically. The process of urbanisation and industrialisation created the conditions for the labour movement to gain political influence. Government intervention in the wage structure took place in response to the changing balance of power between labour and capital. The momentum was created by the deep global economic and political crises in the years 1914-1921. The subsequent change in the direction of economic policy in the wake of the Great Depression, created the economic environment in which the protection of urban industrial wage earners could be maintained without the pressure of global competitive forces. In the next chapter I will argue that complementary reforms in the distribution of land, the capital market institutions and particularly the policies promoting the development of human capital, were too weak to provide these redistributive policies with a solid long run economic foundation.

Chapter 7

Exploring the Recent Rise in Income Inequality in Latin America, 1940-2000

7.1 Introduction

Since the early 1980's income inequality in the majority of LAC's has markedly increased in comparison to the early post-war era (Deininger and Squire 1996, Morley 2001, World Bank 2004, Székely and Montes 2006). This trend is illustrated by the average decadal Gini-coefficients in twenty LAC's from 1950 to 2002 in table 7.1. This "recent rise" in Latin American income inequality was not an isolated phenomenon. Its *proximate causes* were largely similar to those in many OECD countries: skill-biased technological change in combination with eroding protectionist labour market institutions and increasing global competition in markets for labour intensive commodities (Morrisson 2000, Gottschalk and Smeeding 2000 Londoño and Székely 2000, Berman et al. 1998). Yet, the initial levels of income inequality in LAC's were much higher than in the OECD countries and the *ultimate causes* of the recent rise can only be understood against the background of the specific Latin American type of economic development in the 20th century.

One of the most peculiar features of the Latin American development trajectory is the great transition in relative labour endowments. Throughout its colonial and early post-colonial past Latin American economies were coping with labour scarcity problems. Chapter two and three have shown how the institutional responses to this problem contributed to the *institutionalisation of inequality* in the Spanish America. Yet, at present all LAC's are characterised by large surpluses in the supply of low-skilled labour. Whereas at the start of the 20th century the region was still one of the main labour immigration areas, it has now turned into one of the main labour emigration areas in the world. In this chapter I argue that the dramatic changes in the size, sector and skill composition of the labour force reflected and induced increasing income and productivity differentials in the urban economies of Latin America.

First it is shown that the urban informal sector in LAC's expanded rapidly in the second half of the 20th century. The sweeping growth of the urban population largely exceeded the capacity of the urban economy to create more productive jobs. Since informal sector workers hardly benefited from the protectionist wage policies that were part of the ISI

development strategy, the expansion of the urban informal economy not only reflected a polarisation in the production structure of the urban economy, but also enhanced the dispersion of urban income levels. Second it is shown that urban wage inequality in the formal sector increased rapidly in the last quarter of the 20th century in comparison to the pre-war levels discussed in chapter six as well as the levels observed in other NWC's in the same period.

Table 7.1: Gini-coefficients of income inequality, decadal averages for Latin American countries, 1950-2002

	1950's	1960's	1970's	1980's	1990's	2000-2
Argentina	43.7		37.2	42.4	46.6	52.3
Bolivia		50.5		52	58.7	59.1
Brazil (1)	49.1	55.1	60.1	59	59.4	61.2
Chile (2)		46.1	48.5	54.5	54.5	58.2
Colombia (3)		57.8	54.7	50.8	56.4	57.4
Costa Rica (4)		50	47.1	45.5	47.1	50.1
Cuba	51.9	35.4	27.7			
Dominican republic		47.2	45	48	49	
Ecuador				43.7	53.9	56
El Salvador		50.8	43.9		53.1	53.8
Guatemala			47.4	57.6	54	59.8
Honduras		62		58.8	55.3	
Jamaica	56		55.4	49.5	47.6	38.6
Mexico (5)	53	55.5	51.6	49.9	54.6	53
Nicaragua					53.8	54.2
Panama (6)		51.4	49.8	54.4	55.9	57.8
Paraguay				45.1	58.2	
Peru (7)		57.6	56.9	57	49.3	49.3
Uruguay (8)		38.8	42.8	41.1	43.7	44.5
Venezuela (9)		45.3	40.8	42.9	47.5	45.8
Latin American average overall	**50.7**	**50.3**	**47.3**	**50.1**	**52.6**	**53.2**
Latin American average (9 countries)		**50.8**	**50.3**	**50.6**	**52.0**	**53.0**

Source: UNU/WIDER, *World Income Inequality Database* (WIID) 2.0a, June 2005.
Notes: These decadal average Gini-coefficients are based on estimates with a high-quality rating, a national population coverage of either individuals, households or the total labour force including rural and urban areas. To expand the dataset the following exceptions were tolerated: Argentina 1970-2000 urban inequality; Bolivia 1960 low quality data, 1980 urban inequality; Brazil 1950 low quality; Chile 1970 urban inequality; Colombia 1960 low quality; Dominican Republic 1960 urban inequality; El Salvador 1960 low quality; Panama 1960 low quality; Uruguay 1960-2000 urban inequality; Venezuela 1960 low quality.

The main argument is that both interrelated phenomena are the ultimate consequence of a mismatch between the pace of institutional reform in the 20th century on the one hand and the, literally overwhelming, dynamics of demographic growth, urbanisation and global economic and technological change on the other hand. In particular it is argued that Latin American states failed to complement redistributive income policies since the 1920's with policies to redistribute assets and remove factor market imperfections. The failure to redistribute land, to

remove capital market imperfections and to improve the quality of public education left the Latin American economies behind with structural weaknesses. The unequal skill composition of the labour force constrained its modernisation potential. Eventually this mismatch led to the maintenance of the dualistic outlook of the rural economy, and contributed to the increasing polarisation of the income and production structure of the urban economy.

In section 7.2 the timing and extent of demographic growth and urbanisation are discussed in relation to the rapid expansion of the urban informal sector. Section 7.3 analyses the long run trends in the distribution of urban wage income in the formal sector. In section 7.5 the historical explanation for the observed rises in urban wage inequality will be unfolded. Section 7.6 presents the conclusion.

7.2 Demographic growth, structural change and the rise of the urban informal sector, 1930-2000

The four decades between 1940 and 1980 are generally considered as the pinnacle of the Latin American industrialisation and urbanisation process. Apart from some temporary setbacks, rates of economic growth reached an all time high and also in terms of social development this period has been regarded as highly successful during the 20th century (Astorga et al. 2005, Thorp 1998). Table 1.1 in the introduction shows that, between 1950 and 1973, Latin American GDP grew at an average annual rate of 5.3% and population by 2.8%, resulting in an average rate of per capita income growth of 2.6%. Not only the rates of GDP growth and GDP per capita growth were higher than ever before, population growth reached its peak in these years well. Table 7.2 illustrates the magnitude and timing of the demographic transition in Latin America: the peak years of population growth, the rates of growth during these years, the growth rates during the whole period 1950-1973 and, in the last two columns, the growth rates of the age cohort 0-14 in the peak years and the share this cohort attained in total population.

Table 7.2 shows that population growth reached its zenith in the decade between 1955 and 1965. A combination of high fertility rates and rapidly decreasing mortality rates (especially reduced child mortality rates) led to a record growth rate of 2.9% in the years 1959 and 1960. Although Brazil and Mexico weigh heavily in this composite growth rate, the far majority of LAC's witnessed extraordinary growth rates around these years. Venezuela tops the list, with an annual average growth rate of 3.8% between 1950 and 1973, a peak of 4.3% between 1952 and 1955 and a cohort 0-14 share of 43%. Compared by world standards, these growth rates were very high. For instance, the Sub Saharan African composite population

growth rate peaked at 2.9% in the 1980's, with an age cohort 0-14 share of approximately 45% around 1985 (UN, *World Population Prospects* 2004).[85]

Table 7.2: Demographic growth in Latin America, 1950-1973

	peak years of population growth	average annual % growth of population (1950-1973)	average annual % growth of population (in peak years)	average annual % growth of population age cohort 0-14 (in peak years)	% share of population in age cohort 0-14 (in peak years)
Argentina	pre 1913; 1923/24	1.7	3.6		
Brazil	1954/66	2.9	3.0	3.5	43.7
Chile	1959/61	2.1	2.5	3.1	40.5
Colombia	1957/61	3.0	3.3	3.9	46.7
Mexico	1959/61	3.1	3.3	3.7	46.7
Peru	1961/66	2.7	2.9	3.3	44.1
Uruguay	pre 1913; 1925/29	1.1	2.4		
Venezuela	1952/55	3.8	4.3	4.7	46.4
Latin America total (47)	**1959/60**	**2.7**	**2.9**	**3.3**	**42.9**

Sources: UN, *World Population Prospects 2004*, www.esa.un.org/unpp/ ; Maddison (2003) for Argentina and Uruguay.

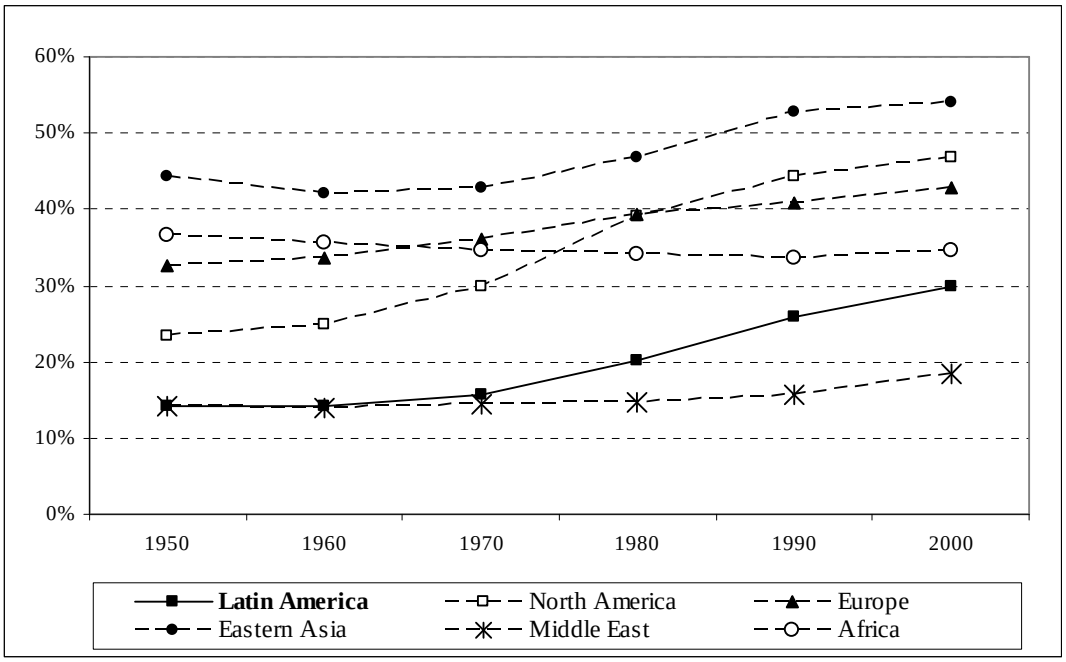
The culmination of demographic expansion in the decade between 1955 and 1965 resulted in a growth peak of the labour force after a time lag of, approximately, a decade and a half. For instance, between 1970 and 1985 the labour force in Brazil increased at an annual average of 4.1%, in Mexico at 4.6% and in Costa Rica at 3.8% (GGDC, *Total Economy Database*, January 2007). The composite aggregate estimate of the ILO gives a 3.1% growth rate for the entire region in the 1970's and a growth rate of 3.0% in the 1980's, as compared to 2.6% in the 1960's and 2.1% in the 1950's (ILO 1997: no. 96-3: p. 19). Central America, taken as a separate region, even recorded a growth rate of 3.7% in the 1970's.

High rates of labour force growth were not only caused by changes in fertility and mortality, but also by comparatively strong increases in female participation rates. The shift of women from household occupations to the formal labour market reflects the sway of social change and economic growth that blew across Latin America. Figure 7.1 shows the comparative trend in female crude activity rates across major regions in the world. The figure shows that in the 1950's female participation rates (in the formal labour market) were comparable to the notoriously low female participation rates in the Middle East. The crude female participation rate increased from 16% in 1970 to 30% in 2000 (ILO 1997). This process had already started in the 1950's, when female employment figures grew at an average annual rate of 2.7%, compared to 1.9% for men. In the 1960's the growth rate jumped

[85] Argentina and Uruguay were notable outliers from the common Latin pattern. As a result of the Atlantic migration wave, their rates of population growth in the period 1870 to 1913 largely exceeded the "natural" growth rates of the 1950's and 1960's. The timing of the peak in population growth in Argentina and Uruguay more closely resembled the NWC's than that of their neighbour countries.

to 3.8% and in the 1970's, again, to 4.9%, compared to 2.2% and 2.5% for men. Since the 1960's, the rise in female participation rates corresponded with a steady decline in crude birth rates.

Figure 7.1: Female crude participation rates in percentages, regional averages, 1950-2000



Sources: ILO (1997) *Economically Active Population 1950-2010*, STAT Working Papers, No. 96

No doubt the changes in the size and the age and gender composition of the labour force were vast. But what really made this transition so profound was the corresponding flow of rural-urban migration. Table 7.3 shows the relative average annual growth of the urban and rural population in Latin America between 1950 and 2005. The table demonstrates that, at least from 1950 until 1980, the difference in growth rate was a staggering 3.0%, and in some countries even notably higher. Consequently, absolute numbers of agricultural employment started to decline in the late 1960's and the growth rate of the rural population declined to near zero during the 1970's (ILO 1997, GGDC 2007). The share of the urban population in the total population increased from ca. 44% in the early 1950's to over 70% in the 1990's.

Such rates of transition are extraordinary high and are comparable with those recorded in present-day China (UN 2004). In contrast, in South East Asian countries such as Malaysia, Indonesia, Thailand and the Philippines the rural population continued to grow until the end of the 20th century or even until present. Although population growth rates in the 1960's in most of these countries were comparable with LAC's such as Brazil and Mexico,

the relative share of the rural population in total population was higher and declined at a substantially slower pace (UN 2004). Whereas in Latin America the entire growth of the population was absorbed by the urban areas (and consequent labour force growth was absorbed by the urban economy), in South East Asia the absorptive capacity of the rural sectors proved to be much higher.

Table 7.3: Population growth in rural and urban areas, total Latin America, 1950-2005

	Average annual % growth of urban population	Average annual % growth of rural population	% difference between urban and rural population growth	% share of urban population in total population
1951/55	4.3	1.3	3.0	43.8
1956/60	4.3	1.3	3.0	47.5
1961/65	4.3	1.1	3.2	51.4
1966/70	4.0	0.8	3.3	55.5
1971/75	3.8	0.6	3.2	59.4
1976/80	3.5	0.3	3.1	63.2
1981/85	3.1	0.2	2.9	66.6
1986/90	2.8	-0.1	2.8	69.7
1991/95	2.3	0.1	2.2	72.3
1996/00	2.2	-0.2	2.3	74.5
2001/05	2.0	-0.3	2.3	76.6

Source: UN, *World Population Prospects 2004*, www.esa.un.org/unpp/

Regarding the sharp distinction in relative land endowments of both regions this is actually a counterintuitive outcome. Despite the abundance of land endowments in Latin America, the prevailing perspectives of life and work in the countryside could not prevent the migration of rural workers to the urban areas. In the land scarce economies of South East Asia a large share of the growing population is able to earn a living in the countryside. Obviously, a shortage of land can not explain why people in Latin America opted so often for an uncertain adventure in the city.

Alternative explanations have been implicitly addressed in chapters two and three. The rigidity of rural land and labour market institutions, which were ultimately designed to coerce the rural workforce, to preserve low rural labour costs and to sustain the prevailing structure of land distribution, can not have acted as a stimulus to stay in the countryside (Huber and Safford 1995, de Janvry and Sadoulet 2002). In addition, urban-biased ISI policies enlarged the attractiveness of the city (Cardoso and Helwege 1992). And finally, the extensive farming tradition in large parts of Latin America clearly favoured investments in the mechanisation of production. Hence, the absolute number of workers per hectare declined, while in South East Asia the relative labour intensity increased (Hayami and Ruttan 1985, Kay 2001).

Due to the combined forces of demographic growth and rural-urban migration the demand of new generations of urban workers for housing, public services (infrastructure (sewage), health, education) and employment increased enormously. Taking into account the complexity of the political systems and the rather low effectiveness of state bureaucracy, these demands could only be met as long as the economy and, especially the number of jobs in urban sectors, continued to expand at high rates. Such a scenario prevailed in most LAC's until the 1970's, but at the time that the urban labour force grew faster then ever before, the long phase of economic growth since the 1940's came to a full stop.

Precise time-series estimates of the size of the urban informal sector are hard to obtain. The problem is that the division between formal and informal economic activities is shady and informal sector activities are usually highly heterogeneous. The Fifteenth International Conference of Labour Statisticians (ICLS) has adopted a resolution on the definition of informal sector workers, stating that they predominantly operate as self-employed workers or in micro-enterprises with a low level of organisation, with little division of labour and capital and with informal labour relations, based mostly on kinship, family ties or local social contacts (ILO 1993).

This description largely fails to capture the essence of the distinction between "formal" and "informal" activities as a legal distinction, but for statistical purposes it has some practical advantages. In line with the ICLS the ILO has adopted an operational definition in which urban informal sector employment consists of a combination of self-employed and unpaid family workers (excluding administrative, professionals and technicians) and workers in micro-enterprises engaging less than 5 or 10 employees operating on a wage or non-wage basis (ILO, Key Indicators of the Labour Market 2006 (KILM indicator 7)).

For the empirical analysis of the urban informal sector in LAC's parts of this definition can be used to obtain consistent time-series and cross-country estimates. Since the 1930's the ILO *Yearbooks of Labour Statistics* provide data on paid employees (wage earners), unpaid family workers and self-employed (own-account workers) in the core sectors of the economy. Hence, the relative share of urban self employed in the total labour force can be obtained for a large number of benchmark years from 1930 onwards. One may refine the heterogeneous category of urban self-employed by subtracting the share of administrative, professional and technical workers such as one-man retail businesses, lawyers, notaries or clergyman etcetera (see PREALC 1982). Yet, given the scarcity of these more detailed data this would greatly reduce the number of observations. An alternative option is to take the entire category of urban self-employed and subtract an estimated fixed share of professional and technical self-employed. A selection of the world's economically most advanced

countries demonstrates that the share of self-employed has declined markedly since the 1930's, and typically to a level between 7 to 10% of the total labour force.[86] Table 7.4 illustrates this for the USA, Canada, UK, France, The Netherlands, Sweden and Japan. Hence, a figure of 7% appears to be a reasonable informed guesstimate for adjustment purposes.

Table 7.4: The percentage share of urban self-employed in the total labour force in a selection of economically advanced countries, 1930-1999

	USA	Canada	UK	France	The Netherlands	Denmark	Sweden	Japan
1930/31	0.08	0.09	0.11	0.16	0.14	0.17	0.18	0.15
1960/71	0.07	0.08	0.07	0.11	0.11	0.11	0.06	0.13
1993/99	0.07	0.08	0.10	0.08	0.09	0.07	0.08	0.07

Source: ILO, *Yearbook of Labour Statistics*, various issues 1936-2005.

A long run international comparison of the relative shares of urban self-employed in Latin America is presented in figure 7.2. The levels and trends of five LAC's, i.e. Chile, Costa Rica, Mexico, Panama and Venezuela are pictured against the USA and Canada. This selection is based on the comparative quality (availability and compatibility) of the labour force data in the ILO statistics. The underlying data and additional notes on the construction of the time-series are presented in appendix table A.7.1.

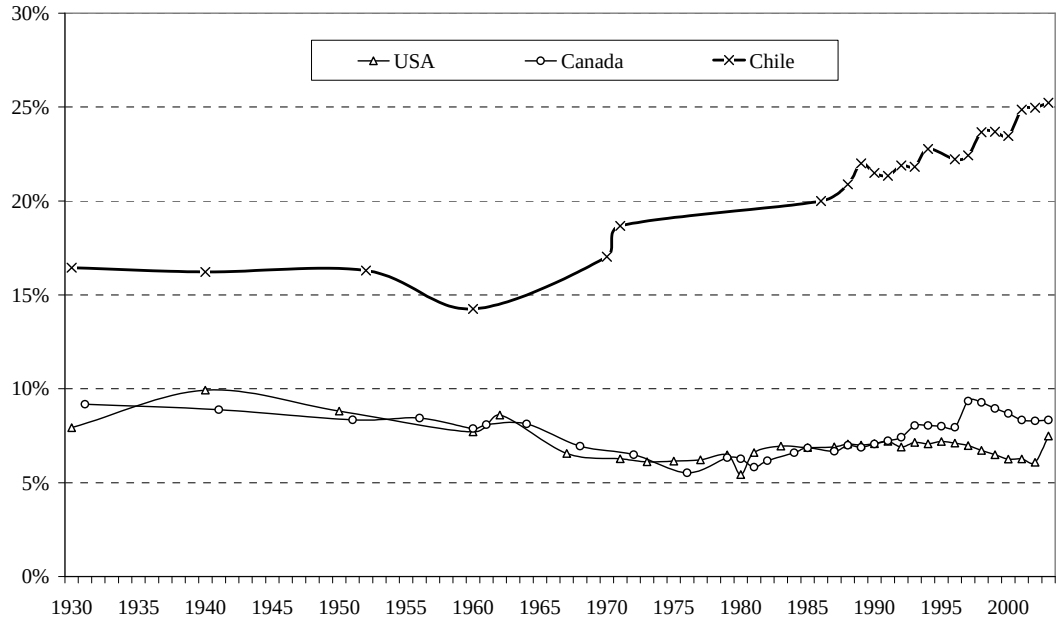
Figure 7.2 shows that the shares of urban self-employed in the observed LAC's were much more in line with the shares in the USA and Canada (and other OECD countries) during the early post-war period than during the last quarter of the 20th century. Even more remarkable is the fact that in all five LAC's this gap continued to widen without until the end of the century. In Venezuela this trend had already started in the 1950's, in Chile, Mexico and Panama it had started in the 1960's and only in Costa Rica it had started in the 1970's. For instance, in Costa Rica, the difference with the USA in 1950 and 1973 was negligible (between 1-3%), but it mounted to 15% in 2003 in just three decades. The Mexican-US gap increased from 2.5% in 1940 and 4% in 1950 to 10% in 1970 and 17.5% in 2001. When subtracting 7% from the Latin American figures we get an indication of the relative size of the urban informal sector. The most recent estimates are 18% for Chile, 15% for Costa Rica, 16% for Mexico, 15% for Panama and 20% for Venezuela. Whereas table 7.4 showed that the share of urban self employed in the advanced industrial economies declined substantially in

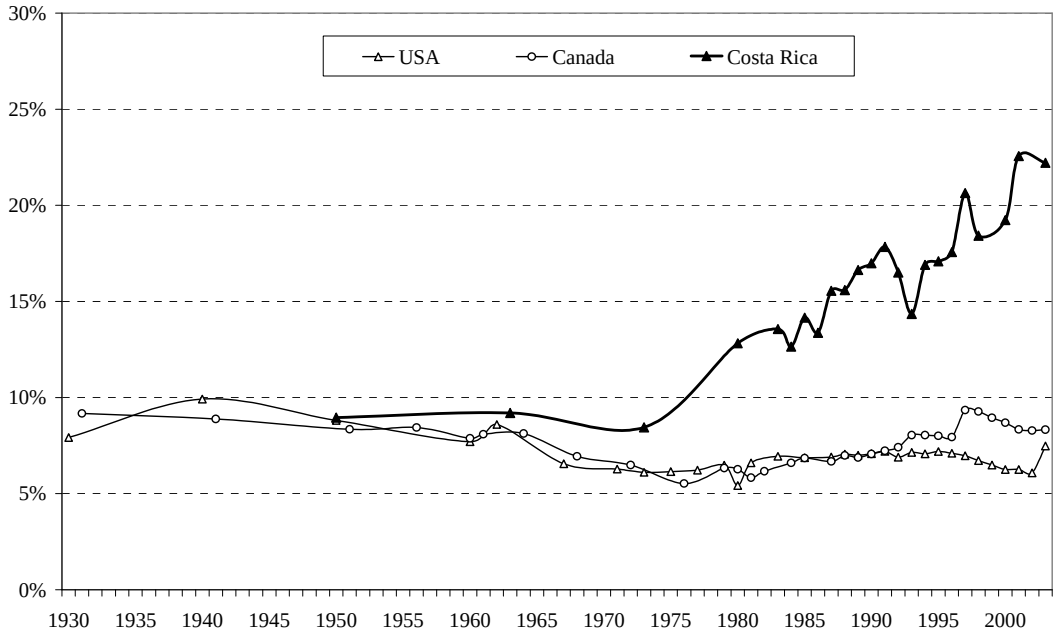
[86] It is important to note that people who are officially registered as unemployed are not included in the category of self-employed. For comparative purposes this separation is adequate, as it distinguishes *un*employment from *under*employment. Registered rates of unemployment in countries without unemployment insurance are usually very low, since most people simply can not afford to be unemployed and/or do not report themselves as being unemployed. In most of the OECD countries, where a system of unemployment insurance exists (and a corresponding registration), public security partially prevents the development of informal sector activities.

the 20th century, at least since the 1930's, in Latin America the opposite trend can be discerned.

The expansion of the urban informal sector appears to be a specific feature of the Latin American development trajectory in the 20th century: it occurred in all LAC's (Cardoso and Helwege 1992, Hillman 2005). The pace of demographic expansion and rural-urban migration was not matched by the expansion of jobs in the urban formal sector. The concentration of urban income earners in low value added activities reflected a dramatic shift in the production structure of Latin American economies. The traditional nature of economic inequality, based on the dual structure of the colonial rural economy was replaced by a new type of dualism in the urban economy.

Figure 7.2: The percentage share of urban self employed in the labour force in Chile, Costa Rica, Mexico, Panama and Venezuela compared to the USA and Canada, 1930-2003




USA
Canada
Costa Rica
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20%
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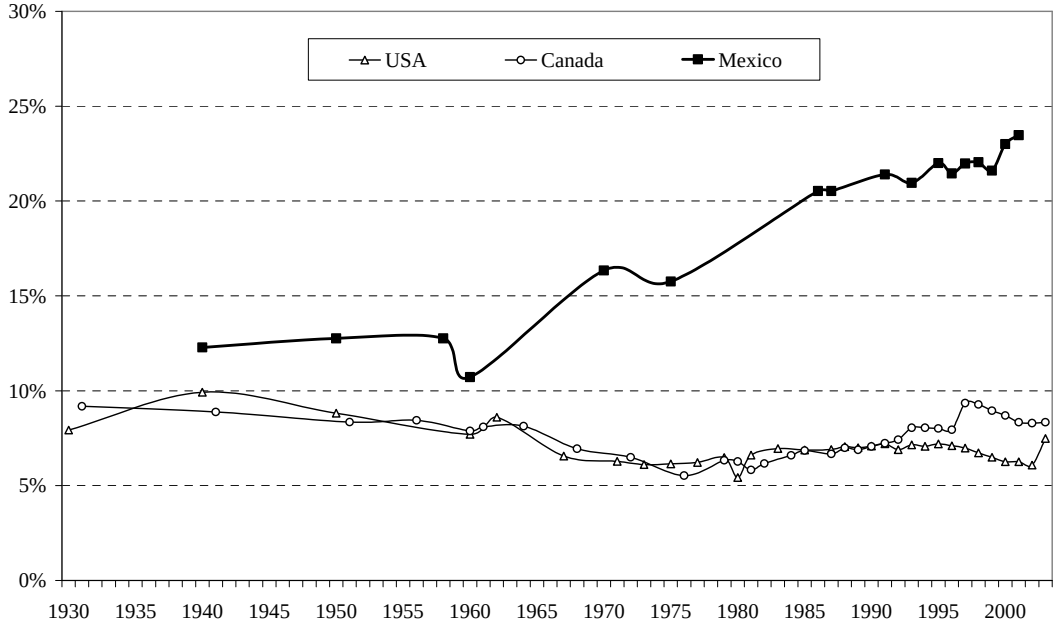
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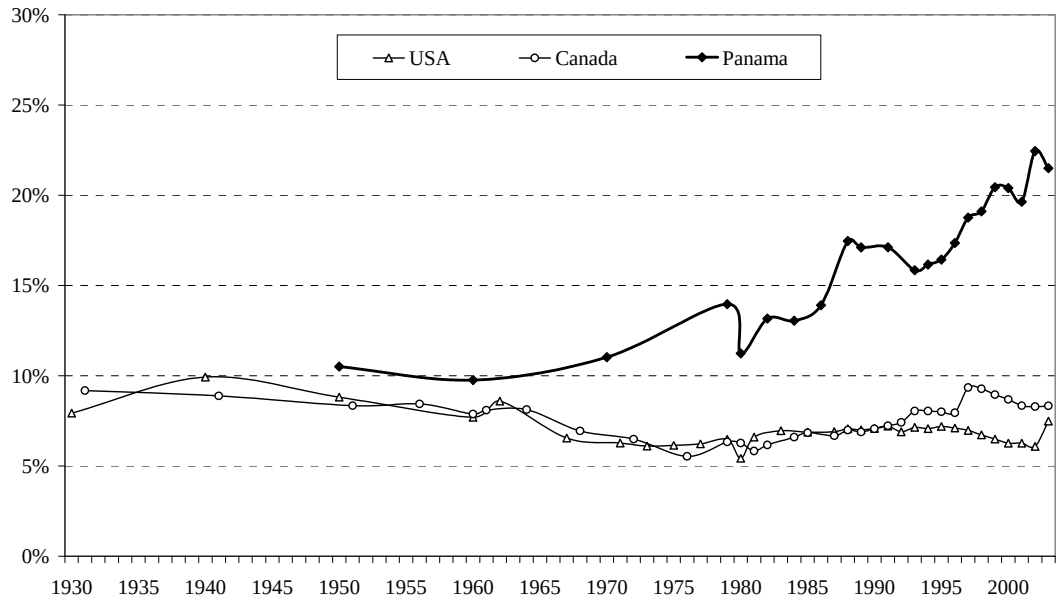
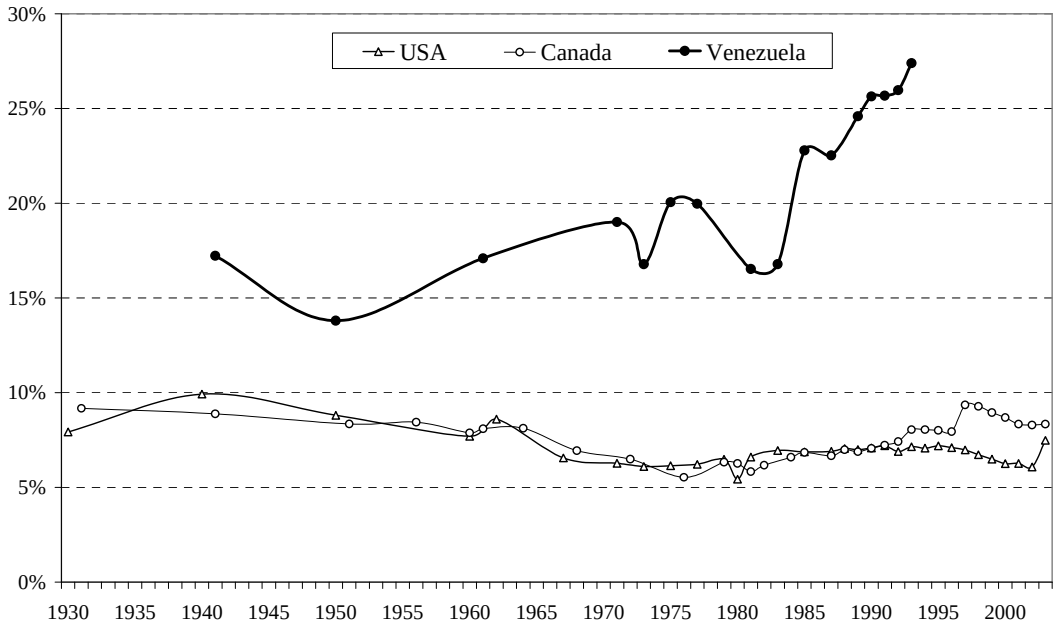


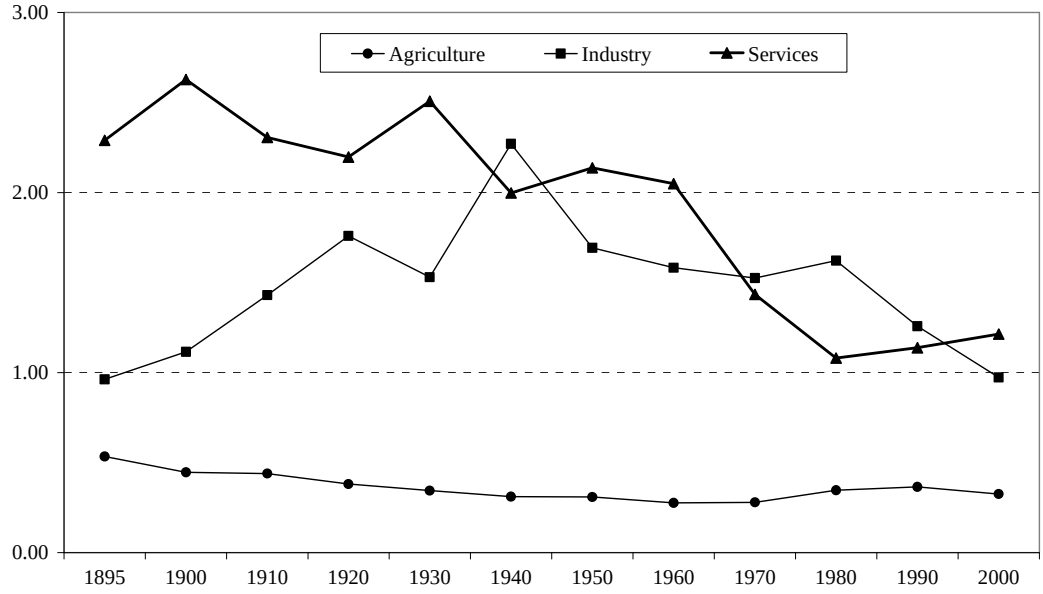


Source: ILO, *Yearbook of Labour Statistics*, various issues 1936-2005

Another way to explore the Latin *type* of structural change is to look at the shifts in relative sectoral labour productivity levels. Figure 7.3 presents the long run trend in relative labour productivity levels in agriculture, industry and services in Mexico from 1985 to 2000. The average level of labour productivity of the total economy is set at one. This graph illustrates

an important "stylized fact" of the post-war trend in relative sectoral productivity in Latin America: a strong and sustained relative decline of labour productivity in services. In all LAC's the service sector recorded the highest levels of labour productivity around 1950 (de Vries and Timmer 2007) and the Mexican figures suggest this was also the situation in the first half of the 20th century. Yet, in the second half of the 20th century an increasing share of the Latin American labour force became engaged in low-value added service activities.

Figure 7.3: Relative levels of sectoral labour productivity in Mexico, 1895-2000 (total economy average = 1.00)

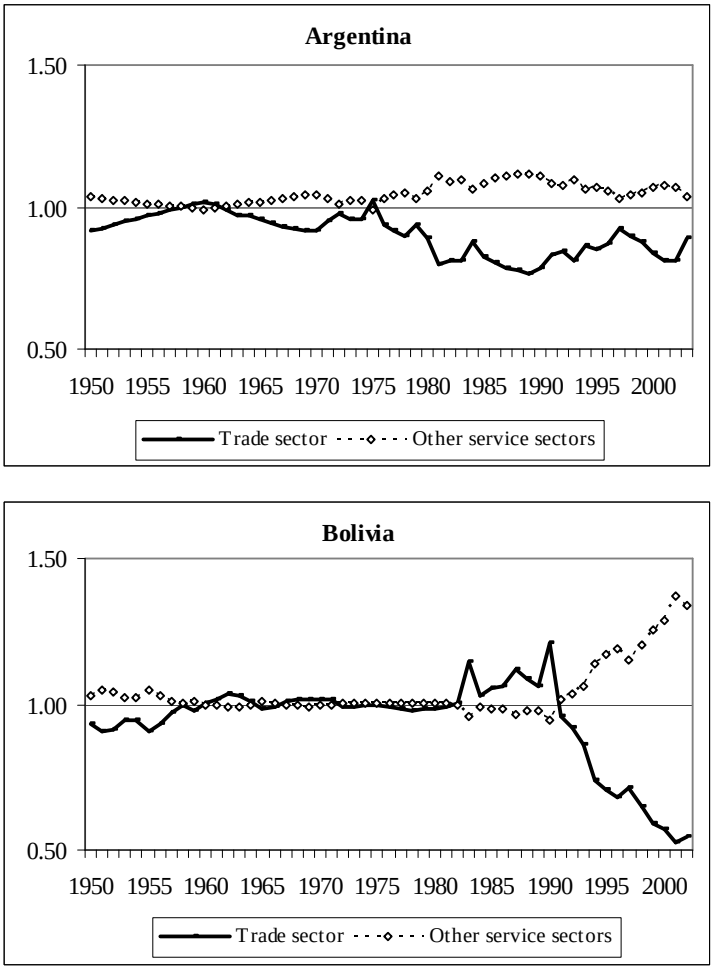


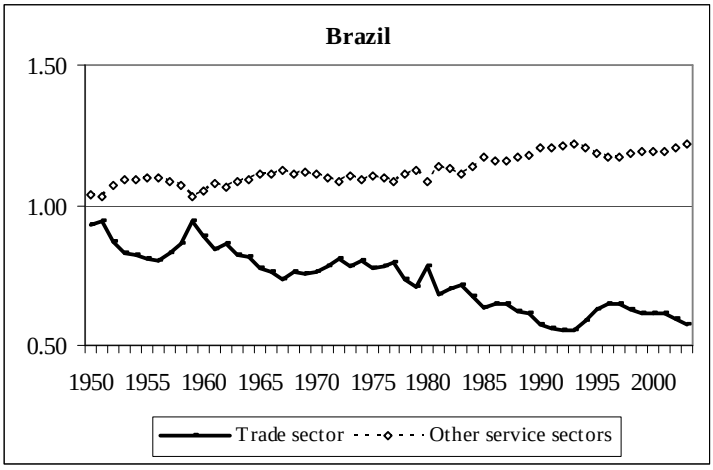
Sources: 1895 benchmark is retrieved from INEGI (1986) *Estadísticas Históricas de México, Tomo I*, México D.F., 1900-1940 is from Mitchell (2003), 1950-2000 is from Timmer and de Vries (2007).

A decomposition of the service sector into the five main categories (trade & commerce, transport & communication, finance & real estate, personal & social services and government services) provides further insight in the underlying sources of this decline. It turns out that the relative productivity decline of the service sector as a whole was largely concentrated in the trade sector. The trade sector, which includes retail and wholesale trade activities in domestic and international markets, is the largest single service sector in the LAC's, absorbing around one third to a half of the total service sector labour force. Figure 7.4 presents the relative labour productivity trends of eight LAC's and the USA in the period 1950-2000, showing that the productivity performance of the trade sector in the USA improved gradually during the second half of the 20th century. Yet, in all the observed LAC's the relative labour productivity

of the trade sector was declining, often ushered in by a notable break point: In Costa Rica and Venezuela the decline started in the early 1970s', in Argentina around 1975, in Brazil and Chile in the late 1970's and in Mexico in the early 1980's. In all these LAC's the downward trend of the trade sector's relative productivity performance continued throughout the 1980's and 1990's. Only in Bolivia the turning point occurred later, around 1990.

Figure 7.4: Relative levels of labour productivity, trade sector versus other service sectors, Argentina, Bolivia, Brazil, Chile, Costa Rica, Mexico, Venezuela and the USA, 1950-2000




Brazil
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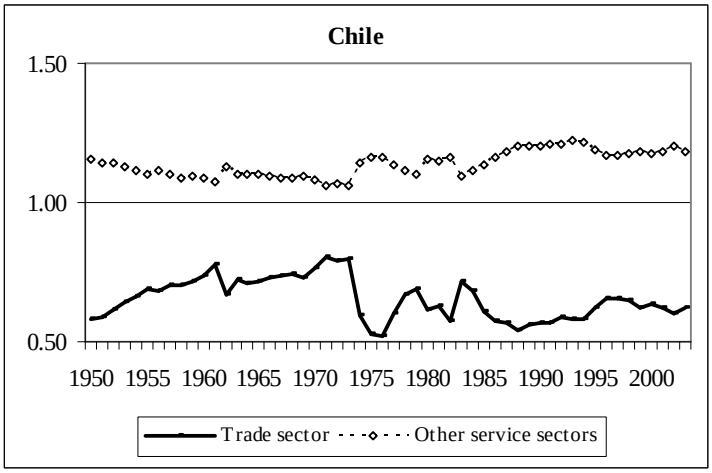
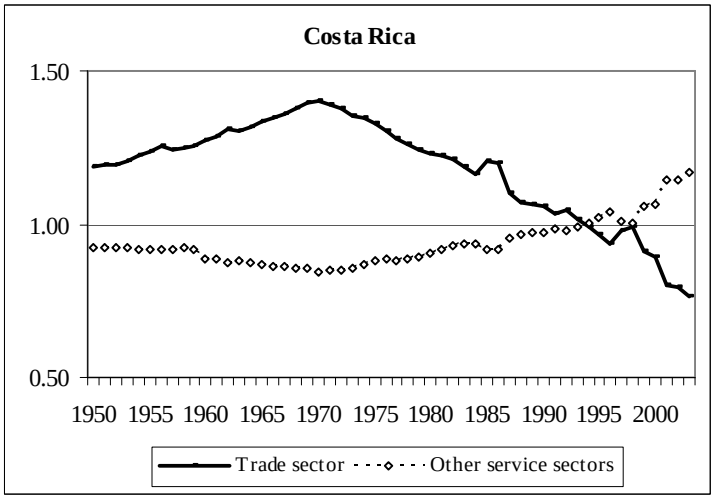
1.00
0.50
1950 1955 1960 1965 1970 1975 1980 1985 1990 1995 2000
Trade sector
Other service sectors


Chile
1.50
1.00
0.50
1950 1955 1960 1965 1970 1975 1980 1985 1990 1995 2000
Trade sector
Other service sectors


Costa Rica
1.50
1.00
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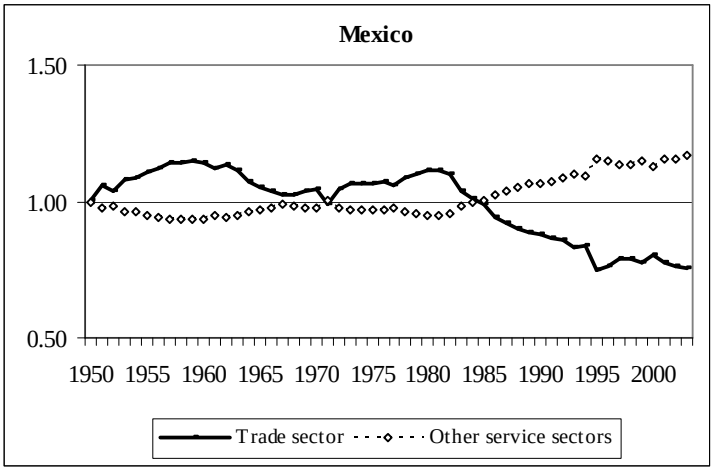
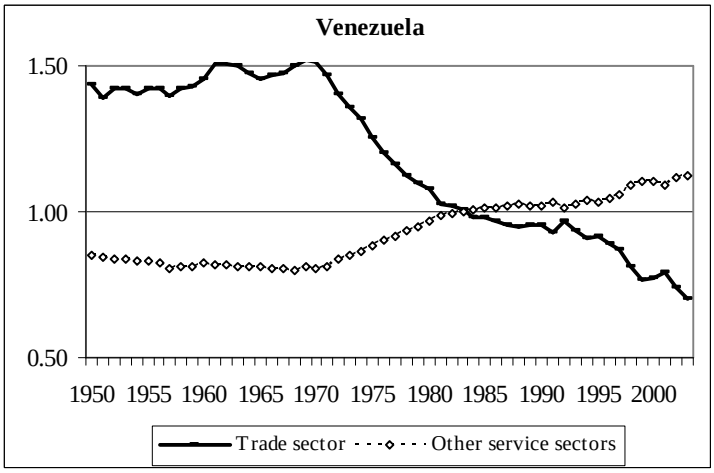
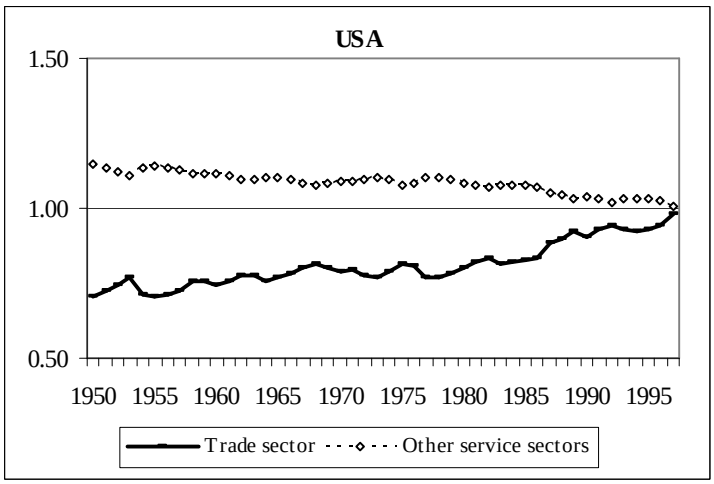
1950 1955 1960 1965 1970 1975 1980 1985 1990 1995 2000
Trade sector
Other service sectors







Source: de Vries and Timmer (2007)

In Mulder's (1999) analysis of service sector productivity trends the marked decline of the trade sector was also signalled. After a gradual increase, the ratio of relative productivity levels in Brazilian trade versus the USA dropped sharply, from a peak of 34% in 1975 to 13% in 1995 (the end year of Mulder's analysis). The Mexico-US ratio dropped after a peak of 25% in 1982 to 12% in 1995 (Mulder 1999: p. 152). This timing is in line with the graphs shown in figure 7.4. According to Mulder the sharp turn in the mid-1970's (Brazil) and early 1980's (Mexico) is caused by the swelling numbers of petty traders in the urban areas. This explanation is supported by ILO labour survey data (ILO, *Yearbook of Labour Statistics* 1993-1995) showing that the lion-share of the urban self-employed in LAC's are registered in the trade and commerce sector. The distribution of the trade sector labour force by status in employment is presented in appendix table A.7.2. In the majority of LAC's the share of self-employed (including the much smaller group of unpaid family workers) consists of more than half of total employment in the trade sector in the early 1990's. By comparison, in Canada and the USA this share does not exceed ten percent.

Indeed, this enormous contrast signals the great transition in relative labour endowments in Latin America that occurred in the course of the 20th century. The trade sector has functioned (and still functions) as the ultimate safety net for the growing surpluses of low-skilled labourers. This category of labourers did not benefit from the social benefits and wage protection that were demanded by labour unions representing formal sector workers. When the Latin American governments started to abolish the wage regulation programs that had protected the workers in the formal sector during the heydays of the ISI policy era, the surplus pool of low-skilled labourers in the urban informal sector effectively constrained the wages of the low-skilled labourers in the formal sector. This tendency of polarisation at the lower end of the labour market is one of the main drivers of the growing income and productivity differentials in the Latin American urban economies. In this respect the recent rise in inequality reveals some strong features of the Lewis model of the dual economy and Kuznets' hypothesis of long run distributional change (Lewis 1954, Kuznets 1955).

7.3 Long run trends in wage inequality in the urban formal sector, 1913-2000

Considering the oversupply of low-skilled labour, the skill-biased direction of recent technological change and the dismantling of protective labour market institutions in the late 20th century, it is hardly surprising that urban wage levels in the formal sector started to diverge (Londoño and Székely 2000, Berman et al. 1998). What is more surprising is the great velocity and magnitude of this divergence, as turns out from a comparison between the scattered pre-war observations of inter-industry wage differentials in manufacturing that were

presented in the previous chapter and the post-war time series of inter-industry wage differentials which will be presented below. These time-series were obtained from national industrial statistics and the collected industrial statistics of the United Nations Industrial Development Organization (UNIDO: http://www.unido.org/).

As noted in chapter six industrial statistics offer a good opportunity to study wage differentials from a long run perspective. The industrial statistics cover a wide range of productive activities in a standardised statistical format. Since manufacturing industries vary largely in terms of capital, skill and technology intensity as well as the nature and scale of production organisation, inter-industry wage differentials are likely to pick up a large part of the wage stretching in the urban formal sector. The separate registration of value added and labour compensation per industry further enables the analysis of the relation between sectoral productivity and wage differentials. Complementary to the inter-industry perspective, an analysis of intra-industry wage gaps is enabled by the separate recording of blue-collar and white-collar labour compensation. In various studies of the UTIP group (University of Texas Inequality Project) it is empirically shown that the trends in the industrial wage data correlate quite well with broader trends in urban wage inequality (Galbraith and Berner 2001, Galbraith and Kum 2002).

The inequality figures presented here are based on the ISIC classification (rev. 1) including 20 manufacturing branches and analysed in a Theil-index framework. The source description is presented in appendix table A.7.3. The Theil-index offers a suitable framework for analysing trends in the distribution of income as well as labour productivity differentials between sectors or industries (Theil 1967), since it does not only take account of changes in relative wages, but also weighs the relative contribution of each industry in total GDP. The Theil index is formally specified as:

$$T = \sum_i w_y^i ((\log w_y^i) - (\log w_e^i)) \quad \text{or,} \quad T = \sum_i w_y^i \log(w_y^i / w_e^i) \qquad [7.1]$$

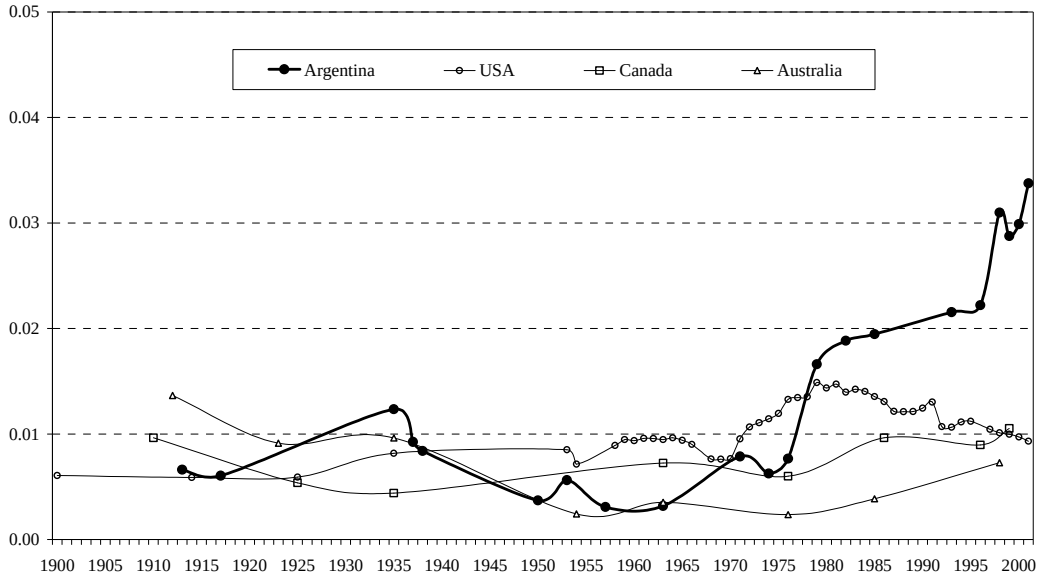
Where the Theil coefficient T sums up over the log percentage share of sector i in total value added or total labour income (w^i_y), minus the log percentage share of sector i in the total labour force (w^i_e). Each sectors' Theil contribution is weighted for the percentage share of income of each sector i in total income (w^i_y). For readers unfamiliar with the Theil index a numerical example of a three-sector economy using the above formula [7.1] is presented in appendix table A.7.4.

Figure 7.5 pictures the long run trend in the Theil-coefficients of manufacturing labour income in the 20th century, comparing Argentina, Brazil and Chile with three NWC's, Australia, Canada and the USA. The graphs show, in line with the argumentation of section

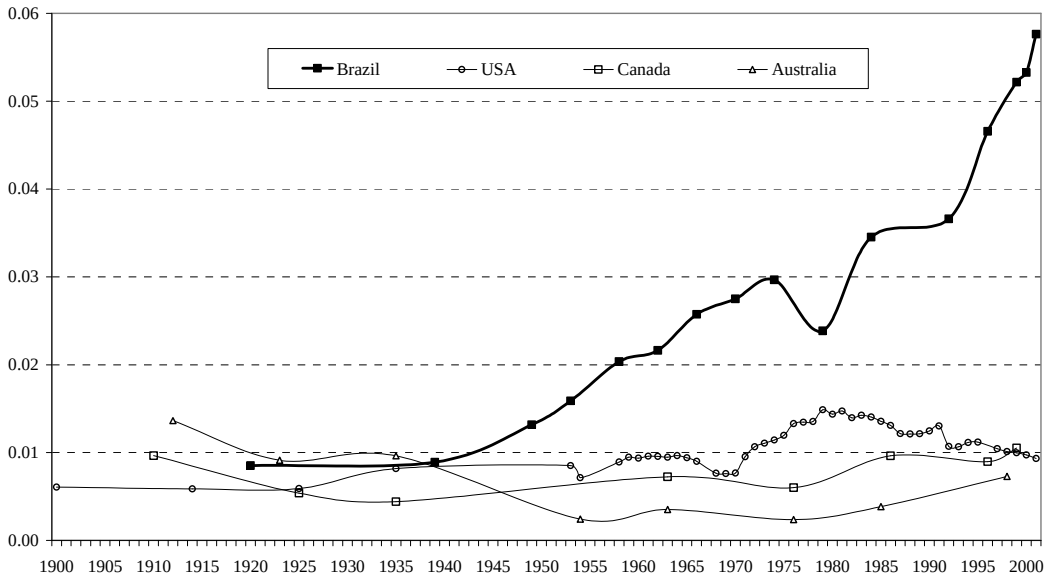
6.3, that the cross-country differences in manufacturing wage inequality in the pre-war era were almost negligible when compared to the large gaps that evolved in the course of the post-war era. Where the coefficients of variation in section 6.3 reveal a slightly higher level of wage inequality in the LAC's during the period 1910-1940, the Theil-coefficients presented in figure 7.5 suggest that manufacturing labour income inequality levels in the two regions were virtually identical and at some points in time even a little lower than in pre-war Australia.[87]

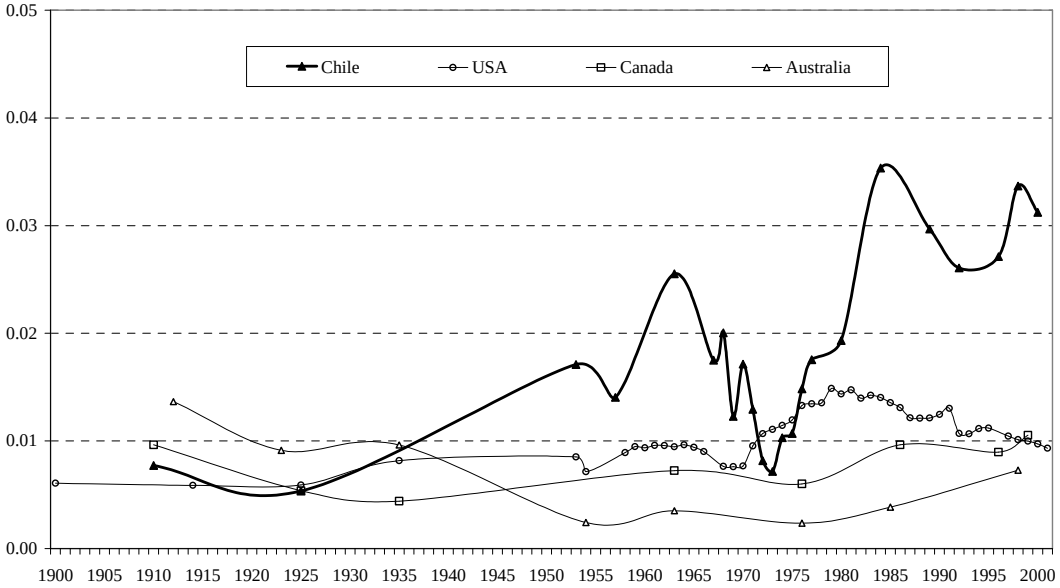
In Australia and Canada fluctuations in the trend of the Theil-coefficient remained limited. In both countries the levels of inequality declined since 1910 and only since the mid-1970's an upward trend can be discerned. In the USA a more pronounced rise in the 1970's to early 1980's was compensated by a modest decline from the mid-1980's until the end of the century. Altogether the Theil coefficients of manufacturing labour income distribution in the three NWC's do not reveal any of the sharp fluctuations, nor the dramatic upward trend that can be witnessed in the three LAC's.

Figure 7.5: Theil coefficient of manufacturing labour income distribution in Argentina, Brazil, Chile versus Australia, Canada and the USA, 1900-2000



[87] From an analytical point of view the major difference between the Theil-index and the coefficient of variation is that the Theil-index does not only take wage gaps into account, but also incorporates the relative weight of each sector in total value added. In this respect the properties of the Theil-coefficient bear close resemblances to the Gini-coefficient (see Atkinson 1983 or Sen 1997).





Source: see appendix table A.7.3

The inter-industry labour income differentials in Brazil and Chile started to widen rapidly in the second half of the 20th century (the remarkable drop in Chile's Theil coefficient from 1960 to 1973 will be discussed in section 7.5). The trend in Argentina clearly deviated from its neighbours until the mid-1970's. The Theil coefficient in the mid-1930's was only surpassed in the early 1980's, whereas in the 1950's and the early 1960's the levels of income inequality were lower than in the USA and Canada and comparable to Australia. In Argentina a steep

increase took place since 1976 (the timing of this watershed is discussed in section 7.5). This upward trend continued throughout the 1980's and 1990's. In sum, all three LAC's, sooner or later, saw themselves confronted with a spectacular rise in manufacturing sector labour income differentials as compared to their pre-war levels as well as the three international benchmark countries.

The Theil-coefficients in table 7.5 demonstrate that the increase in manufacturing labour income inequality was a widely shared Latin American phenomenon. The unweighted regional average of the Theil coefficient rose from 0.014 in the 1960's to 0.015 in the 1970's, to 0.022 in the 1980's and 0.031 in the 1990's. Moreover, in every single Latin American country for which these estimates could be made, an increase in the Theil coefficient in the period between 1960 and 1999 was established.

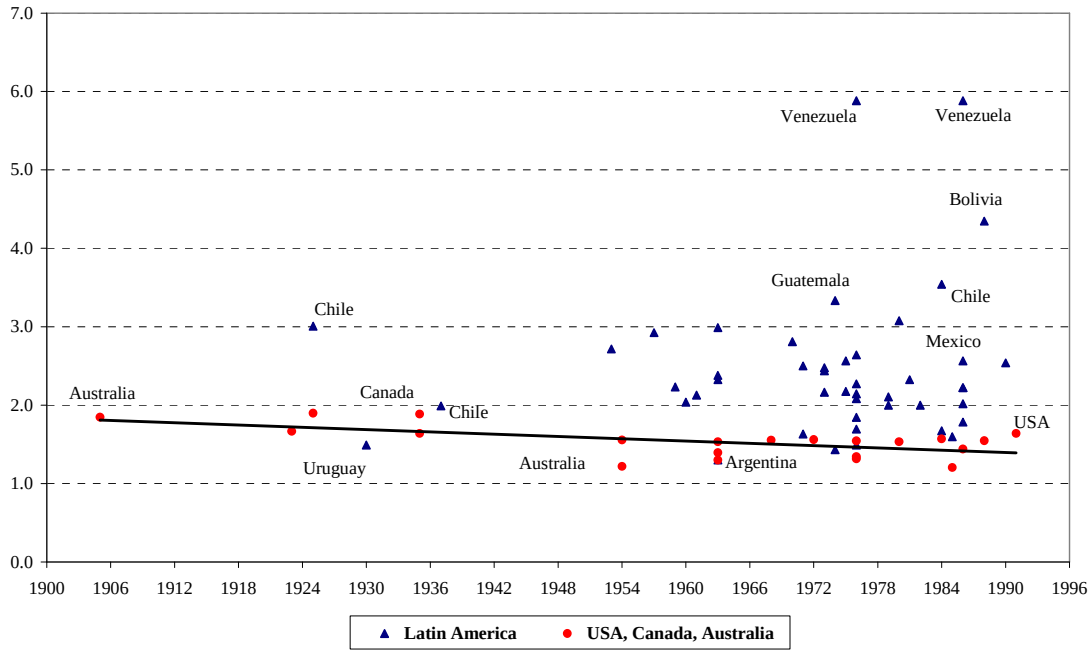
Table 7.5: Decadal averages of the Theil coefficient of manufacturing labour income distribution, Latin America, 1960-1999

	1960's	1970's	1980's	1990's
Bolivia	0.019	0.014	0.031	0.038
Colombia	0.015	0.015	0.016	0.018
Costa Rica	0.008	0.013	0.016	0.018
Dominican Republic	0.021	0.023	0.039	
Ecuador	0.013	0.008	0.016	0.037
El Salvador		0.015	0.017	0.028
Guatemala	0.021	0.025	0.035	0.034
Mexico	0.010	0.012	0.011	0.015
Panama	0.007	0.016	0.028	0.040
Peru	0.012	0.010	0.023	0.047
Uruguay	0.012		0.015	0.030
Venezuela		0.013	0.014	0.032
Latin American average (unweighted)	**0.014**	**0.015**	**0.022**	**0.031**

Source: see appendix table A.7.3.
Notes: In case of more than one observation per decade the average is included.

The evidence for the rise in inter-industry wage inequality is overwhelming, but what about the dispersion of wages within these industries? As noted above, industrial statistics provide data to compute white-collar premiums (See also chapter six, section 6.3). Unfortunately, for most LAC's this type of information is only available for some scattered years between 1968 and 1991 (when the UNIDO stops registering distinctive categories of manufacturing workers altogether). Although country specific time-series analysis are not feasible for this reason, pooling all the available data points allows us to make some important observations. The white-collar premium estimates are presented in figure 7.6, where the triangles indicate the LAC's and the dots represent the USA, Canada and Australia. The linear trend line captures the average white-collar premium between 1905 and 1991 in the three NWC's and provides a benchmark for the assessment of the white-collar premiums in Latin America.

Figure 7.6: The white collar premium in manufacturing, Latin America versus the USA, Canada and Australia, 1905-1990



Source: see appendix table A.7.3
Notes: Latin American countries included with at least one observation are: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Mexico, Panama, Peru, Uruguay, Venezuela

Figure 7.6 shows that the white-collar premiums in post-war LAC's are almost without exception higher than in the NWC's. The average white-collar premium in the NWC's is 1.54 in a band width of 1.20 (Australia 1985) and 1.90 (Canada 1925). Only the white-collar premiums in Uruguay and Argentina are close to or even slightly below the benchmark line. In all other LAC's the estimates are clearly situated above the trend line, the far majority ranging between 2.0 to 3.0. This outcome seems to suggest that educated workers with the ability to carry out administrative work (reading, writing, algebra), are scarcer in LAC's than in NWC's or, from the opposite angle, that blue-collar workers in the NWC's manufacturing sector are better educated, trained and therefore more productive and better paid relative to white-collar employees.

However, when we analyse the observations by country (see appendix table A.7.3) there are no clear indications of either a downward or upward trend in the Latin American white-collar premium in the course of the 20th century. In Chile for example, the inter-industry wages rapidly diverged, but in terms of intra-industry inequality only a small positive difference between the year of the first observation (1925: 3.01) and the last year (1984: 3.54)

can be recorded. In Argentina the white-collar premium declined from 1.71 in 1910 to 1.60 in 1985. Moreover, the absolute wage gaps between industries at the end of the 20th century appear to be much larger than those within industries, i.e. between blue-collar and white-collar workers. In Brazil, for instance, the average worker in the chemical industry earned 4.4 times as much as the average worker in wood and cork industries in 1996, whereas the average employee in the petroleum and coal products industry earned 8.9 times as much as the average employee in the clothing and footwear industry. By comparison in 1984 (the last observation for Brazil) white-collar employees earned just 1.67 times as much as blue-collar employees within the same sector.

Of course one may question whether the white-collar premium is an accurate indicator for intra-industry wage differentials. Increasing capital deepening may have stimulated the demand for skilled blue-collar workers, hence reducing the white-collar premium. On the other hand, if this has been the case, such forces of skill-biased technological change would also have been impacting on inter-industry wage differentials and here we see a remarkable widening of average wages. In other words, the direction of recent technological change was not only "skill-biased", but in the case of LAC's certainly also "sector-biased". This conclusion is further supported by empirical evidence of increasing inter-industry productivity differentials, which will be presented further on in this section.

First we have to identify the industries that are primarily driving the inequality trend. These industries are located at the bottom and the top of the Theil index and listed in table 7.6 for a selection of the largest LAC's and NWC's for two benchmark years in the early 1960's and late 1990's. From the early 20th century onwards, five industries clustered at the bottom of the Theil index: 1) the clothing and footwear industry, 2) the textile industry, 3) the food industry, 4) the wood and cork industry and 5) the leather industry. With the exception of the food industry, the wage levels in all these industries have remained consistently below the manufacturing average in the entire 20th century. Given their relatively small size (and consequently small share in the total wage sum) the Theil contributions of the wood and cork and leather industries were negligible. Hence, the clothing and footwear, textile and food industries ranked in almost all cases at the bottom of the Theil index.

The top of the manufacturing labour income distribution was (and still is) dominated by three highly capital intensive sectors: 1) the chemical industry, 2) the basic metal industry and 3) the transport equipment industry. In the USA and Canada the transport equipment sector recorded the highest Theil contribution, while in Australia, Chile and Peru the basic metal industry stood at the top. In Argentina, Brazil, Colombia, Mexico and Venezuela as well as the Dominican Republic, El Salvador, Guatemala and Uruguay the chemical industry occupied the top position (at least in recent years). In Bolivia and Ecuador the petroleum and

coal products industry was leading. In sum, a notable difference between the LAC's and the three NWC's in the sector-ranking of the Theil-index was not found.

Table 7.6: The manufacturing industries with the minimum and maximum contribution to the Theil-index of inter-industry labour income, 1960-1998

	Year	Theil contribution minimum	Theil contribution maximum
Argentina	1963	clothing & footwear	metal products
	1996	food industries	chemicals
Brazil	1962	Textiles	transport equipment
	1996	clothing & footwear	chemicals
Chile	1973	Wood & cork	basic metals
	1996	food industries	basic metals
Colombia	1963	clothing & footwear	beverages
	1996	clothing & footwear	chemicals
Mexico	1960	food industries	chemicals
	1998	Textiles	chemicals
Peru	1963	food industries	basic metals
	1996	clothing & footwear	basic metals
Venezuela	1971	clothing & footwear	chemicals
	1996	food industries	chemicals
Australia	1963	clothing & footwear	basic metals
	1998	clothing & footwear	basic metals
Canada	1963	clothing & footwear	transport equipment
	1996	food industries	transport equipment
USA	1963	clothing & footwear	transport equipment
	1995	clothing & footwear	transport equipment

Source: see appendix table A.7.3

Now that we have explored the industry details it is important to know to which extent shifts in employment between these industries play a role in the changes of the Theil coefficient. One approach to tackle this issue is to keep the relative wages between two benchmark years (t and t-1) constant in order to separate the effects of the shifts in the employment structure from wage changes.[88] The results are presented in table 7.7 for the same set of countries and benchmark years as in table 7.6.

[88] This method is comparable to some techniques applied in productivity studies. For instance, in a "shift-share analysis" changes in labour productivity are separated into a shift effect, which reflects the changes in aggregate productivity as a result of shifts in employment between sectors/industries with varying productivity levels, and a share effect, which represents the changes in productivity generated within each sector (see for instance van Ark 2000 and 2002). The major difference is that a shift-share analysis is used to decompose sources of growth, whereas the present method is used to decompose the sources of change in income inequality.

Table 7.7: Conjectured Theil estimates with fixed relative sector wages, 1960-1998

	year	Theil coefficient (1)	Theil (t) estimated with wages (t-1) (2)	Explained share of gap (1) vs (2) (percentage points)	Coeff. Var. wages
Argentina	1963 (t-1)	0.0032			0.13
	1996 (t)	0.0222	0.0026	-0.03	0.44
Brazil	1962 (t-1)	0.0216			0.30
	1996 (t)	0.0466	0.0126	-0.36	0.68
Chile	1973 (t-1)	0.0072			0.23
	1996 (t)	0.0337	0.0084	0.05	0.48
Colombia	1963 (t-1)	0.0146			0.39
	1996 (t)	0.0180	0.0178	0.93	0.33
Mexico	1960 (t-1)	0.0102			0.22
	1998 (t)	0.0174	0.0101	-0.02	0.35
Peru	1963 (t-1)	0.0124			0.43
	1996 (t)	0.0591	0.0176	0.11	0.62
Venezuela	1971 (t-1)	0.0130			0.25
	1996 (t)	0.0318	0.0132	0.01	0.42
Australia	1963 (t-1)	0.0035			0.15
	1998 (t)	0.0073	0.0024	-0.29	0.32
Canada	1963 (t-1)	0.0072			0.18
	1996 (t)	0.0090	0.0056	-0.95	0.31
USA	1963 (t-1)	0.0095			0.21
	1995 (t)	0.0112	0.0068	-1.53	0.28

Source: see appendix table A.7.3.

When inserting the industrial wages (t-1) in the Theil (t) we obtain estimates very close to the actual Theil (t-1). This implies that the comparative rise in manufacturing wage inequality in the LAC's as well as the NWC's is mainly caused by changes in the earnings structure. Changes in the employment structure had a very limited impact. In fact, in six out of the ten examined countries, shifts in the sector composition of employment had a reducing rather than an enlarging, effect on the Theil coefficient. The negative shares presented in the fifth column of table 7.8 (in six cases) indicate that employment has shifted from the outer ends towards the middle of the distribution. Such shifts were especially notable in Canada (-0.95) and the USA (-1.53). In Chile, Peru and Venezuela the shifts in the employment structure explained only a minor share of the difference in Theil (t) and Theil (t-1), i.e. 5, 11 and 1% respectively, while changes in relative wages account for the rest, i.e. 95, 89 and 99%. This conclusion is further underlined by the coefficients of variation of the inter-industry wage levels presented in the last column of the table, which shows that wage differentials have risen considerably in the last quarter of the 20th century as compared to the early 1960's as well as compared to the pre-war era estimates shown in table 6.1 and 6.3 of the previous chapter.[89]

[89] The only major exception to this pattern is Colombia, where employment shifts explained 93% of the increase in the Theil between 1963 and 1996. Moreover, Colombia is the only country where the coefficient of variation of wages declined between 1963 and 1996, from 0.39 to 0.33. Consequently, inter-industry wage inequality was lower in 1996 (0.33) than in 1945 (0.35). The Colombian minimum

To finalise the analysis of the sources of manufacturing wage stretching we have to pay attention to the close relation between the wage differentials and the productivity differentials in the Latin American manufacturing sector. Those industries that were identified as the main drivers of wage inequality were in most cases also the main drivers of productivity inequality. At the top of the distribution we find three capital intensive industries: 1) oil and coal products, 2) basic metals and 3) chemicals.[90] At the bottom of the distribution four industries are overrepresented: 1) wood and cork, 2) furniture, 3) clothing and footwear and 4) textiles. Figure 7.7 plots the changes in the coefficient of variation of inter-industry wage differentials (x-axis) against inter-industry productivity differentials (y-axis) for the same countries and years as in table 7.6 and 7.7. The scatter plot shows that, with the exception of Colombia (again), the changes in wage inequality were positively related to the changes in labour productivity inequality. It should also be noted that the increase in productivity differentials was much larger in the LAC's than in the NWC's.

In sum, the tendency of polarisation in the income and production structure of the service sector, and particularly the expansion of the urban informal sector, came along with an equal tendency of polarisation in the largest representative of the urban formal sector, i.e. the manufacturing sector. The striking rise in manufacturing wage inequality has been mainly accounted for by five industries at the bottom and four industries at the top of the distribution (out of a total of twenty ISIC industries). The same industries were also responsible for the corresponding rise in inter-industry productivity differentials. This finding strongly suggests that any answer to the question as to why urban wage inequality increased so rapidly in Latin America in the later half of the 20th century, should also explain why productivity levels moved accordingly. It also suggests that the answer should explain why we find the most capital intensive industries at the top of the wage distribution.

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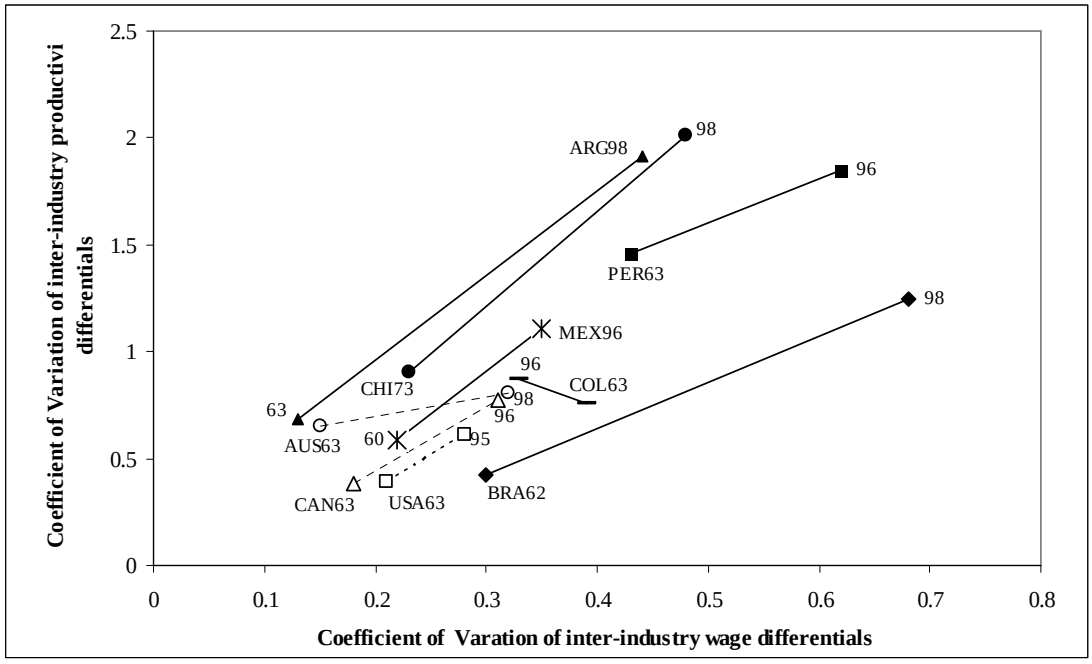
wage policy may explain this deviating pattern. Whereas in almost all LAC's the real value of minimum wages fell during the 1980's (after the implementation of measures to increase the flexibility of the labour market), in Colombia the real value of the minimum wage increased by ca. 45%. Hence, in 1989, the minimum wage level of Colombia stood at 53% of the average unskilled wage, whereas for instance in Mexico this was just 13% (Bell 1997).

[90] For the computation of labour productivity differentials the tobacco industry was, in some countries (a.o. the USA and Australia) excluded since the high levels of taxation on this specific product disturbed the comparison.

Figure 7.7: Manufacturing inter-industry wage differentials (X-axis) versus productivity differentials (Y-axis), Coefficients of Variation, 1960-1998



Source: see appendix table A.7.3.
Notes: Countries included are Argentina (ARG), Brazil (BRA), Chile (CHI), Colombia (COL), Mexico MEX), Peru (PER), Canada (CAN) and the USA (USA). In comparison to table 7.7 and 7.8 Venezuela is excluded because the value added data of the year 1971 were missing.

7.4 Explaining the recent rise in urban income and productivity differentials

Why were the changes in urban wage and productivity differentials so much more pronounced in the LAC's than in the USA, Canada or Australia? I argue that we can only understand this phenomenon when we take account of a long run historical perspective. In this perspective the consequences of colonial land inequality and the lagged development of the public educational system in the post-independence era for the composition of the urban labour force in the late 20th century play a central role. Chapter four has demonstrated (see figure 4.1 and appendix table A.4.1) that the income gaps between Latin Americans with different levels of schooling are currently among the highest in the world. Large parts of the Latin American labour force did not dispose of the means to access the capital market to set up their own enterprise or increase their educational status, knowledge and skills (Galor and Zeira 1993, de Soto 2000). The legacy of land inequality and coercive rural labour market institutions has influenced this development pattern in various ways. It constrained the

mobility of labour from an entrepreneurial, social an educational point of view, but it enhanced the mobility of labour from a migratory point of view.

The relative scarcity of high educated labourers increased the price of skills which are required to innovate. In this respect it is important to note that especially in the labour intensive and low-value added industries such as clothing and footwear, leather, textiles, food and wood and cork productivity growth lagged behind when they were confronted with the discipline of the market. In those industries where labour costs played a less decisive role in competition, firms were able to embark on a path of skill and technology intensification, hence realising productivity growth. This especially was the case in the highly capital intensive industries. The development of these industries was traditionally based on the domestic presence of natural resources, such as wood in Brazil, metal ores in Chile and Peru, oil in Bolivia, Ecuador, Colombia, Mexico and Venezuela and a whole variety of other raw materials that serve as valuable inputs in the production of chemicals. In these sectors employers could afford to pay higher wages to attract expensive skilled workers. Yet, there were other reasons why employers in these sectors may have preferred to raise the wages of their employees.

A good example is the oil and coal products industry. Oil-sector wage premiums occur all over the world, but the comparative levels of the oil-sector wage premium in Latin America are extraordinary high. In the late 1990's the average oil-sector wage exceeded the average manufacturing wage by 70% in the NWC's, while the average figure of fifteen LAC's lay around 215% (UNIDO, *Industrial Statistics*, various issues 1995-2007). Of course, this difference may reflect the specific concentration of skilled workers in the oil sector, but other factors are likely to play a role as well. First, the negotiating position of labour unions is stronger when profit margins are high and, consequently, distortions in the production process are more costly.[91] Hence, the threat of strikes is higher, which can be countered by offering comparatively high wages. High profit margins also create incentives for rent-seeking behaviour at the top. If the salaries of top managers are disproportional, it is likely that part of the rents trickle down in order to buy workers' loyalty. Hence, wages can be used as a lubricant for goodwill and positive publicity.

Especially firms benefiting from monopolistic advantages, for instance the exclusive control over key mineral resources or a granted position as main supplier of public sector organisations, are likely to share these benefits with their employees. Public sector workers thus kept enjoying a preferential treatment in an economic environment that reintroduced the discipline of the market. There is some detailed evidence for Mexico from the *Anuario Estadistico de los Estados Mexicanos* (1990-2005) that workers engaged in state-owned

[91] Besides, disruptions in production in oil refineries or specific chemical and metal industries may also be more expensive for technical reasons.

enterprises fared extremely well in the years after the economic recession of the 1980's. Various wage statistics show that the average public sector wage level increased with 63% compared to private sector wages between 1988 and 2002. Moreover, the employees of the state-owned financial enterprises witnessed a relative wage increase from an average of 2.42 above the private sector wage level in the years 1980-1988 to 6.61 in the year 2002. In non-financial state-owned enterprises the wages rose from 2.34 in 1988 to 3.42 in 2002. Such relative wage increases are more likely to signal a political culture of self-enrichment and exclusive social networks rather than the effects of skill biased technological change.

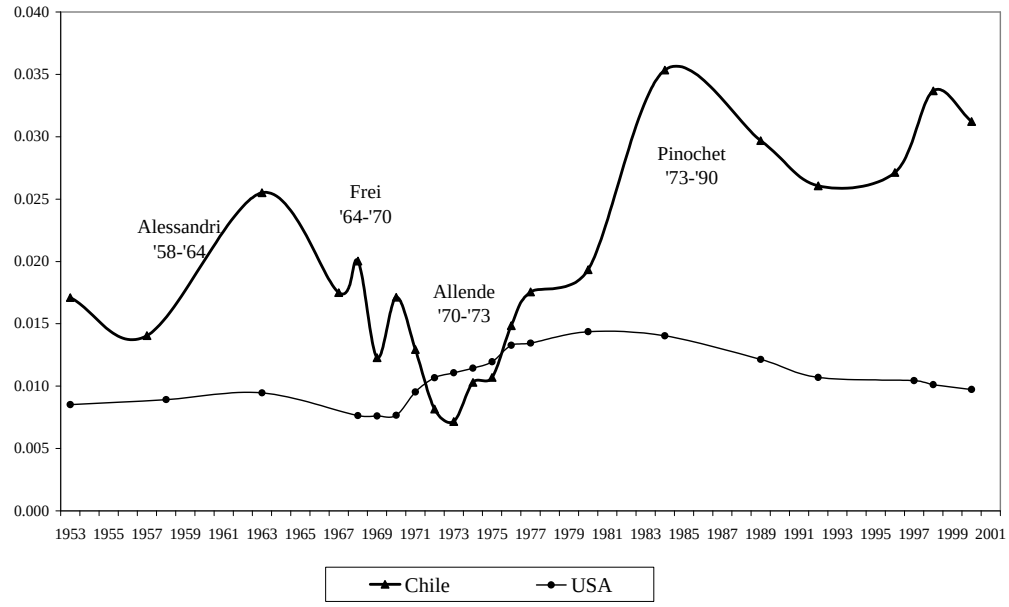
Yet, there is another way of interpreting the phenomenon of polarisation in the income and production structure of the urban economies in Latin America. This departs from the notion that, given the unequal skill composition of the labour force, the initial levels of urban wage inequality in the mid 20th century were too low and they inevitably had to increase at some point in the course of the 20th century. Hence, it is not surprising that manufacturing wages have been adjusting to levels which reflect much more of the large extent of educational inequality and capital market imperfections. Then the crucial question is how large the impact of wage regulations on the wage distribution was? And what about the timing of the inevitable release of such wage policies?

To get a feel for the potential impact of wage regulations on wage inequality as well as the timing of their abolishment I review the cases of Argentina and Chile. In the discussion of figure 7.5 it has already been noted that the trend of the Theil coefficient in Argentina deviated considerably from the trend in Chile between the 1940's and mid-1970's. In Argentina industrial wages were subject to regulations of largely leftist oriented governments, which were heavily influenced by the dominance of *Peronist* social and economic policies. When Juan Domingo Peron became head of the department of Labour in 1943 he initiated a social program including real wage increases, a reduction of working hours, paid vacation and the implementation of various social insurance benefits. This program was successful in combining the support of industrial entrepreneurs and industrial workers against the increasing infiltration of Marxist and Communist ideologists in the labour movement (Rock 1987). The graph of Argentina in figure 7.5 shows that as a result of these wage regulations manufacturing wage differentials declined markedly in the 1940's and 1950's. Industrial wage differentials only started to soar after the military coup in March 1976. This regime change heralded the definitive end of Peronism in Argentina. Under the economic polices of the Videla regime.

The post-war trend in Chilean manufacturing wage inequality was also highly responsive to political regime changes. Figure 7.8 shows that the major turning points in the trend of the Chilean Theil coefficient coincide with the presidencies of respectively,

Alessandri (198-1964), Frei (1964-1970), Allende (1970-1973) and Pinochet (1973-1990). Under the conservative government of Alessandri inter-industry wage differentials grew, mainly due to wage increases in the basic metal industry (traditionally dominated by the copper industry). The electoral reforms that were passed by the Chilean congress during Alessandri's presidency increased the number of voters from 1.15 million to 2.9 million and enlarged the political leverage of the labour unions and left wing parties.

Figure 7.8: Manufacturing inter-industry wage differentials in Chile and the USA, 1953-2001 (two-years moving average of the Theil coefficient)



Source: see appendix table A.7.3

The Frei administration rose to power after the electoral victory of the Christian Democratic Party in 1964 (PDC). Frei opted for a political direction between right-wing "reactionaries with no conscience" and left-wing "revolutionaries with no brains" (Collier and Sater 2004: p. 308). Part of his strategy was to counterbalance the dominance of leftist parties in the labour movement by pursuing social reforms, including various attempts to redistribute income and assets. The most notable attempt was a program of agrarian reform, which completely failed to take effect due to fierce resistance of conservative landowners. The Frei administration was more successful in the nationalisation of the copper industry, which until then was controlled by the Americans (Collier and Sater 2004: pp. 308-20). Figure 7.7 shows that the convergence of manufacturing wages was substantial under Frei's presidency. A large part of this

convergence was accomplished by reducing the wage gaps between the private sector and the public sector. The high wages in the basic metal industry converged towards the average.

Yet, the steepest decline of the Theil coefficient coincided with the installation of the socialist government of Allende in September 1970. During the first year of his administration Allende declared a large scale nationalisation of industries, a massive expansion of public works and a "Keynesian" impulse to consumption and economic growth. Average wages raised with some 55% to compensate for the inflation rate of 33% (Collier and Sater 2004: p. 344). In line with his socialist program, blue collar workers in low paying industries benefited most from the new wage regulations. Consequently, the Theil coefficient dropped from 0.017 to 0.007 between 1970 and 1973, the year that general Pinochet launched a successful military coup against the Allende regime. The rapid decrease of the white-collar premium was also noticeable, dropping from 2.81 in 1970 to 2.17 in 1973. Under Pinochet these trends were immediately reversed and both indicators rose to unprecedented levels in just one decade after 1973.

In sum, the cases of Argentina and Chile have indicated that manufacturing wage differentials before the mid-1970's were to a considerable extent compressed by labour market institutions. Hence, the great recent rise in manufacturing wage inequality, and presumably in total urban wage inequality can be interpreted as the result of two complementary forces. First, the erosion of protective labour market institutions unleashed a wage adjustment process, which restored the equilibrium prices on the basis of the actual supply and demand for skills. Second, increasing global competition and skill-biased technological change translated into a strongly sector-biased development of the wage structure in line with increasing sectoral productivity differentials. Monopolistic competitive advantages in capital intensive industries are likely to have enhanced the polarisation of the already dualistic structure of the urban economies in Latin America.

7.5 Conclusion

In the mainstream economic literature the "recent rise" in Latin American income inequality has been mainly regarded as the consequence of skill-biased technological change (Londoño and Székely 2000, Morley 2001, Behrman et al. 2003). The present chapter has attempted to trace the roots of the upward trend in income inequality further back in time through an empirical assessment of the development of the urban informal sector and the trends in manufacturing wage inequality throughout the 20th century. Wage and productivity differentials were studied in a Theil-index framework.

The comparative empirical analysis has indicated that LAC's in the last quarter of the 20th century have been witnessing a major expansion of urban informal sector employment as well as a sharp rise in manufacturing (formal sector) wage differentials. In addition, the rise of the urban informal sector was found to correspond with a decline in relative labour productivity levels in the service sector, and especially in commercial services. Manufacturing wage inequality was found to move in line with manufacturing productivity differentials. These findings do not challenge the prevailing view that the forces of skill-biased technological change spurred income inequality in a context of market liberalisation and globalisation since the mind 1970's (Morley 2001). Another matter is why the potential effects of skill-biased technological change on total income inequality were so large, that even given the much higher initial levels of income inequality in the region as compared to other world regions, the Gini-coefficient still increased substantially? The interconnections between various historical factors are indispensable to understand this phenomenon.

The expansion of the urban informal sector cannot be understood without considering the dynamics of the demographic transition and the additional impulse to urban population growth given by extraordinary rates of rural-urban migration. On the one hand the economic perspectives in the countryside were apparently so poor that large parts of the rural population chose for an insecure adventure in the city. The historical legacy of pervasive rural inequality plays an important role in the explanation of this phenomenon. On the other hand, the attractiveness of working and living in the city was increased by the preferential treatment of specific parts of the urban labour force during the heydays of ISI policies.

The historical legacy of asset inequality had severe social repercussions. The lack of political will and organisational capacity to invest in human capabilities at the basis of society created a severe burden for future economic development: a large surplus of unskilled labour confronted with very meagre future perspectives. Large parts of the new generations of urban workers were excluded from social security and political voice, which were both strongly connected to the membership of labour unions who only selectively represented the demands of the poorest.

The rapid rise in inter-industry productivity differentials in the late 20th century revealed that, in a period of increasing global competition, the labour intensive industries were forced to compete on labour costs, whereas the typical capital intensive industries strengthened their competitive advantages either by technological innovation and skill intensification or by maintaining monopolistic control over key inputs, or both. Rising wage inequality is a likely consequence of such a polarisation process. In other words, with the abolishment of wage regulation schemes in the last decades of the 20th century the labour earnings structure adjusted to levels which much better reflected the characteristics of, what in fact had never ceased to be, typical dualistic economies.

Chapter 8

Conclusion

8.1 The historical evolution of inequality in Latin America

The forces of economic modernisation in the 20th century swept away the pre-modern rural outlook of the Latin American economy. All LAC's witnessed unprecedented rates of demographic growth, industrialisation and urbanisation. The increased velocity and impact of technological innovation fundamentally altered the structure of production and the composition of the labour force. In many advanced industrial countries this modernisation process opened up vast opportunities for social mobility and expanding human capabilities. In many OECD countries inequality levels are now considerably lower than in the late 19th century. Nevertheless, current levels of income inequality in Latin America appear to be higher than half a century ago, and perhaps even higher than in the late 19th century. Why did modern economic growth not lead to a sustained decline in levels of personal income inequality in Latin America?

In an attempt to tackle this complicated question three presumptions were made. First, it is not the pace of economic growth, but rather the *nature* of economic development that determines whether an economic transition process comes along with major changes in inequality the long run. Second, changes in the degree of factor mobility are the prime determinant of *sustainable* changes in the distribution of assets, income and wealth. Third, institutional changes are the ultimate cause of changes in the degree of factor mobility.

Consequently, a comprehensive explanatory framework of long run distributional change should include the impact of specifically "Latin American" initial conditions on the path dependent process of economic and institutional development. In other words: the determinants of economic inequality should be studied in their specific historical context. Finally, the interconnections between these determinants, i.e. globalisation, structural change (in the broad sense of the word, including demographic and technological change) and institutional change, should be studied. Institutional change is taken to be an endogenous process. This is the departure point of this study, below follows a summary of its main conclusions.

On the basis of secondary literature chapter two discusses the *institutionalisation of inequality* that occurred during the formation of colonial settler societies in Latin America. This

expression indicates that economic inequality in the colonial era was not just based on a system of state granted monopolies and privileges, but was also deeply embedded in day-to-day practices (and ideologies) of social exclusion and ethnic discrimination. Iberian metropolitan institutions were designed to control factor markets, especially the land and labour market. High levels of land inequality and various types of coercive labour market institutions, such as slavery, serfdom and debt peonage, were legitimised by a colonial order promoting the concentration of political power in the hands of various elite factions. The loyalty of these elite factions, i.e. the bureaucracy, the clergy and the military, was essential for the Spanish crown to control its overseas empire and exploit its mineral riches. The institutionalisation of inequality under colonial rule implied that asset inequality was pervasive and persistent far into the post-colonial era, but the highly uneven spread and impact spread of colonial rule in the region also implied that this legacy differed largely from the colonial core areas to the periphery.

Chapter three explores the colonial roots of land inequality in Latin America in a comparative perspective. A cross-colony regression analysis of land inequality unequivocally shows that former Latin American colonies are characterised by extraordinary high levels of land inequality. The main question is whether the specific characteristics of Latin American natural endowments or the nature of Iberian colonial institutions provide a better explanation for the observed persistence and broad diffusion of the phenomenon of land inequality. It is argued that the distribution of land was, primarily, a consequence of the policies of the Iberian administrations to bind the loyalty of specific local colonial interest groups. This conclusion is merited by a cross-colonial comparative case study. The cases of three British colonies, i.e. Malaysia, Sierra Leone and Zambia show that colonial policies of land (re)distribution (or their absence), are mainly the result of local (Sierra Leone) or international (Zambia) political and strategic considerations and, only in second instance, relate to the geographic feasibility of a plantation economy (Malaysia). This explains why in a region with such diverse natural endowments, land inequality could still become such a widespread phenomenon.

The legacy of land inequality and the corresponding coercion of large parts of the rural population had important implications for the nature of economic development in the 20th century. Land inequality per se does not necessarily pose a burden to economic modernisation. If land inequality would have been induced by some exogenous endowment characteristics, these would have lost their economic relevance in the wake of structural change. Yet, at the time independent Latin American nation states started to transform into urban industrial societies, the large estate owners were still major representatives of the political status quo and, as a result, were well able to organise themselves and defend their claim on land and labour resources.

The call for agrarian reforms has, in many instances, been effectively blocked by a landowning elite attempting to retain its traditional economic and political privileges. This distributive conflict had (at least) two important long run consequences. It slowed down public efforts to strengthen human capabilities, especially via public education, and it contributed to the massive migration of the rural poor to the cities in the second half of the 20th century. In other words, pre-modern land inequality, 20th century educational inequality and the expansion of the urban slumps in later decades are intimately related.

Chapter four starts with the observation that nowhere lese in the world (apart from a few Middle East countries) the income differentials between individuals with different levels of educational attainment are as high as in Latin America. Educational inequality is, at present, the single most important determinant of income differentials in Latin America. Chapter four demonstrates that school enrolment rates in Latin America from 1870 onwards were considerably lower than could be expected on the basis of average per capita GDP levels. And although the expansion of primary school enrolment was not faster or slower than could be expected, it is shown that even in comparison to the least developing regions in the world, rates of grade repetition and dropping out in primary education were extremely high. Because of the development of private schools for the rich, and the biased distribution of public resources towards tertiary education, the quality of the schooling programs for the masses remained poor. In the last two decades of the 20th century these conditions have improved significantly, but they are still lagging far behind the standards of OECD economies.

Historically, the ponderous path of Latin American educational expansion relates to the unwillingness of the rich to redistribute part of their wealth to invest in public education for the poor. In the context of capital market imperfections, the unequal distribution of collateral assets, such as land, severely aggravated educational access barriers. Prevailing ideologies justified the idea that education was a privilege of the rich and illustrated the mentality of the ruling elites in the 19th and early 20th century. Poverty was held to be a result of a lack of innate capacities and the introduction of expensive programs of mass education would be a waste of money. Among the poor the stance towards schooling was less ideologically inspired, but all the more pragmatic. The forgone rents of sending children to school instead of work in fields or factories had to be accounted for in the light of the perceived economic gains of schooling. Because of the evident ceilings in the social pyramid, the opportunity costs of education easily became prohibitive.

The second part of this thesis starts with a discussion of theoretical and historical perspectives on long run distributive change. On the basis of this overview chapter five develops a stylized picture of the secular trend of inequality in Latin America's long twentieth century. The

chapter assesses the interconnections the economic forces of globalisation and structural change and specific institutional changes. Special attention is being paid to the advent of organised labour in the late 19th and early 20th century and the impact of globalisation and structural change on the growing political power of the labour movement. It is argued that the major turn in socio-economic policy during the interwar years can be viewed as a political response to the increasing threat to stability posed by the labour movement. That is to say, only in the economically more advanced LAC's of that time. A second watershed in socio-economic policy occurred in the 1970's and 1980's. This period of political and economic turbulence can, ironically, be considered as the result of the definitive failure to accommodate the demands of labour, and particularly urban industrial labour. My central hypothesis is that these turning points in policy determined the direction of the secular inequality trend in Latin America: a tendency of increasing inequality from 1870 until 1913, a tendency of decreasing inequality from the 1920's onwards and, again, a tendency towards increasing inequality from the early 1980's onwards.

Chapter six and seven empirically assess this conjecture. Chapter six studies the patterns of change in the distribution of factor income during the first phase of the economic transition between 1870 and 1940. The analysis yields three empirical results, which in combination support the conjecture of a trend break in the period 1919-1929. First, relying on the work of Williamson and co-authors (see for instance O'Rourke and Williamson 1999, Williamson and Bértola 2006, Williamson 2006), it is shown that the relative rise in real unskilled urban wages (relative to land rents and GDP per capita) in the years after the First World War, constitute a major trend break in the distribution of factor income compared to the period 1870-1913. Second, inter-industry and inter-occupational urban wage gaps as well as intra-industry skill-premiums are shown to have been very modest by international comparative standards. This is especially the case in the more southern countries, such as Argentina, Brazil, Chile and Uruguay. Third, despite the significantly lower levels of capital-intensity in industrial production, the distribution of manufacturing income is shown to be biased towards the factor capital instead of labour. Altogether these findings suggest that the relative rise of the more egalitarian distributed wages in total factor income during the interwar years, marked the start of a phase of convergence in the interpersonal distribution of income.

Chapter seven analyses long run changes in urban wage and productivity differentials focusing on the period 1940-2000. The results are linked to a discussion of the ultimate causes of the "recent rise" in income inequality. Hence, this chapter brings together various aspects of the historical process discussed in preceding chapters. The bottom line of the argumentation is that the current institutional system was insufficiently prepared for the dramatic transition in relative labour endowments. The fundamental changes in the

composition of the labour force, especially the great rise of the urban informal sector, were the result of institutional barriers that were rooted in the colonial past.

The expansion of the urban informal sector in the last quarter of the 20th century was a result of unprecedented demographic pressure and an uncontrolled flow of rural migrants to the city. The incidence of rural-urban migration in Latin America was much higher than, for instance, in the newly industrialising economies in East Asia. This phenomenon can only be understood when taking into account the ISI policies favouring urban labourers at the expense of rural labourers. And perhaps even more important is the historical legacy of pervasive land inequality as discussed in chapter three. Colonial institutions had been designed to cope, first and for all, with the problem of chronic labour scarcity. Yet, these institutions formed a very poor foundation to absorb the rapidly growing surplus of urban labour. The conditions to make optimal use of the talents of unskilled labourers were simply absent (see chapter four).

An investigation of the trends in inter-industry manufacturing wage and productivity differentials reveals the consequences of a lack of institutional reforms. First, inter-industry wage differentials were much higher at the end than at the beginning of the 20th century (as presented in chapter six). Second, increasing wage and productivity differentials appear to be correlated in the last quarter of the 20th century. Third, the increasing trend of manufacturing wage and productivity differentials clearly outpaced the increasing trend observed in the three other NWC's (Australia, Canada and the USA). Most of the studies analysing the recent trend of income distribution in OECD countries and LAC's (1970-2000) find that skill-biased technological change is *the* ultimate cause of increasing wage differentials. Skill-biased technological change has probably, but not necessarily, been enhanced by increasing global competition in labour intensive commodities. Yet, the question remains why the increase in inter-industry wage and productivity differentials was so much sharper than elsewhere?

My answer is twofold. First, the poor quality and unequal distribution of education severely restricted the mobility of the Latin American labour force in terms of entrepreneurship and human capital acquisition. Skill-biased technological change and the increasing surplus of unskilled labour kept wages in low productive sectors under pressure, while the wages of the better educated and skilled labourers increased. The redistributive income polices that were pursued in many LAC's around the mid-20th century were insufficiently complemented by institutional reforms to remove factor market imperfections. Although this part of the answer accounts for the recent rise in inequality in Latin America from a historical perspective, it does not exactly clarify why urban wage gaps increased *when* they did.

The *timing* of the rise in urban wage inequality corresponded with important changes in labour market policies. Where factor market institutions were designed to protect the wealth of the land owning elites in the 19th century, they were designed to protect the

development and stability of the urban sector, and in particular the urban industrial sector, in the middle of the 20th century. Wage regulations played an important role in industrial development policies and formed an indispensable part of the political agenda of left wing parties and labour unions. The examples of *Peronism* in Argentina and the presidencies of Frei and Allende in Chile illustrate that the impact of wage regulation programs on the level of wage inequality was huge: before the implementation of neo-liberal reforms in the late 20th century, urban wages gaps were in many LAC's *artificially* compressed. Yet, these wage regulation programs often excluded the poorest segments of the population, i.e. the rural poor and the urban informal sector workers. Hence, with the growth of the latter group, the structure of urban income and production revealed a tendency towards polarisation. But the main point is that, in the long run, wage regulation schemes can only be sustained if economic competition is also regulated.

Changes in labour market institutions became inevitable when the financial and fiscal burden of populist and socialist models of industrial development grew to unmanageable proportions. In some LAC's these development models were abruptly ended by a political or military coup. In other countries reforms were provoked by the debt crises that struck the entire region in the early 1980's. Wages were readjusted to levels in accordance with free markets. That is to say: especially the wages in private sectors operating in a competitive global environment, but not in those industries which retained monopolistic advantages. Especially in highly capital intensive industries there appeared to be sufficient leverage to raise the wages of its employees. In this regard the neo-liberal reforms can be said to have reduced market *interventions*, but did much less to resolve the historical legacy of market *imperfections*.

8.2 Future perspectives

The unfolded argumentation may seem to contain some traces of historical determinism. This study, however, does not suggest that the recent rise of inequality in Latin America was *inevitable*. Neither is the prospect of persistent inequality in the future. This study points out that the institutional reforms necessary to distribute the fruits of increased economic welfare in a more egalitarian way, first and fro all, require a solid solution to the endemic distributive conflicts which are the ultimate cause of institutional rigidities. This study further points out that some specific socio-economic policies, such as the ISI policies of the mid-20th century, have had unintended, but undesirable, long run consequences. Taking stock of the past can help to avoid policy mistakes in the future. And there are reasons to be optimistic. When making up the balance, it is clear that the conditions of inequality at the start of the 21st

century differ fundamentally from those around 1870. Some areas of progress are especially worth mentioning.

Modern economic growth is driven by the capitalisation of highly specific technologies, knowledge and skills. Sustained rates of productivity growth are the key to the reduction of inequality and poverty in the long run. Investments in the accessibility and quality of education form an absolute prerequisite. Such an investment effort requires endurance, a deeply experienced sense of urgency and a broad consensus on the necessity and usefulness of resource reallocation towards public education. Although it is virtually impossible, at any point in time, to judge whether progress will be sustainable, public investments in education have been rapidly increasing in the last decades and educational completion rates have rapidly improved. To see whether these steps forward have corresponded with improvements in the quality of education internationally comparable data on students test results have to be awaited

A related area of progress relates to the reduction of factor market imperfections. Procedures to acquire formal recognition of ownership rights are still fraught with bureaucratic red tape. Corruption and social discrimination prohibit access to legal services to large groups of people and also contribute to the weaknesses in property rights protection in general. These institutional failures do not only result in a suboptimal investors' climate, they also lead to a waste of energy, talents and human motivation. These barriers press hardest on the people that do not dispose of collateral assets and have no access to social or political networks to express their concerns. Yet, capital market constraints are actively countered, for instance by the widespread introduction of micro-credit programs. These programs facilitate capital mobility and expand business opportunities, especially in the informal sector. On the other hand, the success of these micro-credit programs also has a downside, as they tend to withhold the involvement of domestic commercial banks in the informal sector.

Active support for the poor in the form of immediate transfers, social security programs or public goods requires complementary policies to mend the incentive structure in such a way that such policies do not create an everlasting dependency. The basic principle of pro-poor aid should be that it becomes redundant in the near future. The adoption and design of such policies demands a capable, interested, responsible and decisive administration. Although virtually all LAC's are at present administered by a democratically elected government, good governance still is one of the major bottlenecks to the implementation of sustainable strategies of poverty relief and inequality reduction. But also in this area there are some promising signals of improvement.

The outspoken tendency in some LAC's towards increasing openness and transparency in policy making and administrative procedures may spill-over to neighbouring countries. For instance, the impressive recent political and economic development of Chile,

sets an example for the region and can induce a virtuous cycle of *institutional competition* across countries in the region. Latin America has clearly embarked upon a path of economic integration. When intra-regional transaction costs will be further reduced and the opportunities of intra-regional economic integration will be further exploited, the chances for economic specialisation, diversification and *mutual learning* will increase. Yet, the political actuality also gives reason to fear that some LAC's will repeat the mistakes of the past. Increasing terms of trade of mineral resources such as oil and gas, reduce the incentives to diversify the economy and strengthen its foundation for future generations. Solving endemic distributive conflicts by abandoning fiscal discipline is not a solid strategy to reduce poverty and inequality in the long run.

Appendices

Table A.3.1: The distribution of land holdings by country, Gini-coefficients, 1880-1999

		year	Frankema	Taylor & Hudson	Deininger & Olinto
1	Algeria	1930	59,6		
2	Algeria	1973	63,5		
3	Argentina	1914	80,3		
4	Argentina	1947	80,6		
5	Argentina	1960	81,4	86,7	85,6
6	Argentina	1988	81,4		
7	Australia	1910	73,4		
8	Australia	1924	67,6		
9	Australia	1960	82,0	88,2	85,3
10	Australia	1971	80,5		
11	Austria	1930	68,4		
12	Austria	1960	67,1	70,7	68,8
13	Austria	1990	61,2		
14	Bangladesh	*1960*			41,8
15	Bangladesh	1977	41,7		
16	Barbados	1961	81,6		
17	Barbados	1989	84,8		
18	Belgium	1930	75,9		
19	Belgium	1959	60,0	60,4	
20	Belgium	1970	57,8		
21	Bolivia	*1960*			76,8
22	Brazil	1920	78,0		
23	Brazil	1960	78,7	84,5	84,1
24	Brazil	1985	80,2		
25	Burkina Faso	1993	39,1		
26	Cameroon	1972	40,7		
27	Canada	1931	48,7		
28	Canada	1961	52,6		55,1
29	Central African Rep.	1974	33,8		
30	Chile	1927	83,7		
31	Chile	1965	86,5		
32	Chile	1997	84,1		
33	China	1997	43,8		
34	Colombia	1960	80,5	86,4	82,9
35	Colombia	1988	74,3		
36	Congo, dem. rep (Zaire)	1970	53,2		

37	Cote d'Ivoire	1974	41,5		42,3
38	Costa Rica	1963	73,9	78,2	80,6
39	Cyprus	*1960*			62,0
40	Cyprus	1985	59,8		
41	Czechoslovakia	1921	63,3		
42	Denmark	1919	52,2		
43	Denmark	1933	47,5		
44	Denmark	1959	44,2	45,8	43,0
45	Denmark	1989	42,8		
46	Dominican Republic	1960	74,5	80,3	
47	Ecuador	1954	80,4	86,4	84,0
48	Ecuador	1974	77,2		
49	Egypt	1915	73,0		
50	Egypt	1930	70,3		
51	Egypt	1961	63,3	67,4	54,9
52	El Salvador	1961	78,3	82,7	82,1
53	Estonia	1925	42,1		
54	Ethiopia	1977	42,4		
55	Finland	1929	39,2		
56	Finland	1959	33,8	35,1	49,4
57	France	1930	62,9		
58	France	1963	50,2		54,4
59	France	1988	54,6		
60	Gabon	1974	40,2		
61	Germany	1907	70,4		
62	Germany	1925	70,5		
63	Germany, fed. rep	1960	52,4	66,8	55,4
64	Germany, fed. rep	1971	49,4		
65	Ghana	1970	53,0		
66	Greece	1971	47,0		45,4
67	Greece	1993	53,9		
68	Guadeloupe	1969	60,0		
69	Guatemala	1950		86,0	
70	Guatemala	1964	77,0		85,3
71	Guinea	1989	45,2		
72	Guyana	1989	63,9		
73	Haiti	1971	46,2		
74	Honduras	1952	70,6	75,7	76,5
75	Honduras	1993	65,3		
76	India	1960	56,6	52,2	61,4
77	India	1986	57,9		
78	Indonesia	1963	52,7		55,5
79	Indonesia	1973	47,1		
80	Indonesia	1993	45,4		
81	Iran	1960		62,5	62,3
82	Iran	1988	67,7		
83	Iraq	1958	82,0	88,2	72,6
84	Ireland	1930	55,3		
85	Ireland	1960	57,5	59,4	
86	Israel	1970	69,8		80,0

87	Italy	1930	71,5		
88	Italy	1960	62,0	73,2	74,3
89	Italy	1990	73,3		
90	Jamaica	1961	75,7	77,0	80,3
91	Japan	1909	40,0		
92	Japan	1930	39,0		
93	Japan	1960	39,8	47,0	43,2
94	Japan	1980	50,3		
95	Japan	1995	51,1		
96	Jordan	1983	64,3		67,7
97	Kenya	1960	76,2	69,2	75,0
98	Kenya	1974	63,1		
99	Korea, rep.	1961		38,7	34,0
100	Korea, rep.	1970	30,7		
101	Korea, rep.	1990	37,2		
102	Kuwait	1970	72,5		
103	Laos	1998	38,2		
104	Latvia	1925	50,4		
105	Lesotho	1960	38,1		
106	Lesotho	1990	41,1		
107	Liberia	1971	68,1		
108	Libya	1960		70,0	
109	Lithuania	1930	44,0		
110	Luxembourg	1950		63,8	
111	Madagascar	*1960*			80,4
113	Malaysia	1960	68,0	47,3	64,0
114	Mali	1960	45,1	47,7	47,8
115	Malta	1960	50,2	47,8	
116	Mauritius	1930	74,2		
117	Mexico	1960		69,4	60,7
118	Morocco	1962	57,7		
119	Mozambique	1999	36,8		
120	Myanmar	1993	46,3		44,3
121	Nepal	1971	54,2		
122	Netherlands	1921	66,2		
123	Netherlands	1930	56,8		
124	Netherlands	1959	55,7	57,9	50,5
125	New Zealand	1910	78,6		
126	New Zealand	1918	77,6		
127	New Zealand	1930	76,2		
128	New Zealand	1960	69,6	73,4	76,4
129	New Zealand	1972	71,2		
130	Nicaragua	1963	75,9	80,1	
131	Niger	1980	31,2		
132	Norway	1929	60,0		
133	Norway	1959	36,2	67,6	39,1
134	Pakistan	1961	44,7	65,0	55,6
135	Pakistan	1989	55,0		
136	Panama	1960	69,9	73,5	80,4
137	Panama	1990	82,2		

138	Paraguay	1961	86,3		85,7
139	Paraguay	1991	84,9		
140	Peru	1961	85,4	93,3	92,3
141	Peru	1994	81,1		
142	Philippines	1950	48,2		
143	Philippines	1960	48,8	53,4	56,0
144	Philippines	1991	54,7		
145	Poland	1960	51,1	46,5	
146	Portugal	1968	75,6		71,8
147	Portugal	1989	73,5		
148	Puerto Rico	1930	69,9		
149	Puerto Rico	1959	70,7	73,8	
150	Puerto Rico	1987	73,4		
151	Reunion	1972	63,4		
152	Romania	1930	43,3		
153	Saudi Arabia	1972	74,2		
154	Senegal	1960	46,7		49,3
155	Senegal	1998	47,8		
156	Sierra Leone	1970	42,4		
157	Singapore	1973	29,1		
159	Slovenia	1991	56,2		
160	South Africa	1927	62,8		
161	South Africa	1960	64,3	70,0	
162	Spain	1960	79,1	79,7	84,5
163	Spain	1989	80,2		
164	Sri Lanka	1961	62,3		65,7
165	Swaziland	1971	83,5		
166	Sweden	1919	57,3		
167	Sweden	1961	48,8	50,6	45,6
168	Switzerland	1929	54,3		
169	Switzerland	1969	50,4		50,0
170	Syria	1971	64,3		
171	Taiwan	1920	53,9		
172	Taiwan	1960	39,0	46,3	
173	Tanzania	*1960*			79,0
174	Thailand	1963	44,4	46,0	42,6
175	Thailand	1993	44,7		
176	Togo	1961	45,2		
177	Togo	1970	51,0		
178	Trinidad and Tobago	1963	69,1	69,1	
179	Tunisia	1961	61,6		64,6
180	Turkey	1927	56,3		
181	Turkey	1960	60,8	59,2	59,5
182	Turkey	1991	58,5		
183	Uganda	1963	48,1		54,9
184	Uganda	1991	57,4		
185	UK (England and Wales)	1921	62,6		
186	UK (Scotland)	1925	64,6		
187	UK (Northern Ireland)	1925	58,9		
188	UK	1960	68,7	72,3	67,7

189	UK	1993	64,4		
190	Uruguay	1937	77,5		
191	Uruguay	1960	79,1	82,6	81,3
192	USA	1880*	47.0		
193	USA	1910	57,1		
194	USA	1930	60,1		
195	USA	1959	67,7	71,0	73,1
196	USA	1987	71,9		
197	Venezuela	1956		90,9	91,7
198	Venezuela	1961	85,7		
199	Vietnam (South)	1960	56,2	58,7	
200	Vietnam	1994	47,4		
201	Yugoslavia	1950		43,7	
202	Zambia	1971	69,9		

Sources: Institut International d'Agriculture (IIA), *International Yearbook of Agricultural Statistics 1932-1933*, Rome; Various issues of the decennial FAO, *Report on the World Census of Agriculture*, Rome; Taylor and Hudson (1972) *World Handbook of Political and Social Indicators*, 2nd edition, Yale University Press: New Haven, London; Deininger and Olinto (1999) Asset distribution, inequality, and growth, *World Bank Policy Research Working Paper No. 2375*. The figure for the USA 1880 was kindly provided by Galor, Moav and Vollrath (2003).

Table A.3.2: Regression variables and data characteristics

Land Gini: Denotes the Gini-coefficient of the size distribution of land. For all countries the year closest to independence is included and for all non-colonies the earliest observation available. For most African and Asian countries this implies an observation around the end of the colonial period. This is also the case for the New World Countries Australia, Canada and New Zealand. For Latin America and the US there is a considerable time lag between the year of independence and the first available land distribution observation. The earliest land Gini for the US refers to the year 1880, which at least rules out a great deal of the later changes of modern technological advances on land distribution. For Latin American countries the land Gini's either refer to the early 20th century or the early post-war period. The question is whether these land Gini's still reflect the colonial roots of land inequality? Most Latin American countries are notorious for their persistent high levels of land inequality and there is overwhelming qualitative evidence supporting the claim that changes in land distribution have been limited (see a.o. Williamson 1992 and Bakewell 2004). For Argentina and Haiti this claim may be problematic however. The area of Argentina remained largely unoccupied during the colonial era. Land inequality in Haiti was undoubtedly large during the colonial era, but the successful slave revolution in the 1790's entailed a large program of land redistribution. Haiti became the only Latin American country with a land Gini below the world average in the 20th century.
Mean Temperature: Denotes the mean annual temperature in country x. The data are derived from McArthur and Sachs 2001.
Ranching dummy: Dummy variable set at 1 for countries with an obvious historical economic specialisation in extensive ranching activities. Specialisation is defined as more than 30% of the agricultural land area devoted to ranching (FAO decennial census of agriculture, various issues) and a share of ranching products (wool, hides, meat and bovine cattle) in historical exports (Mitchell 2003). The following countries were selected on the basis of these criteria: New Zealand, Australia, USA, Uruguay, Argentina, Mexico and Honduras.
Food crops: Denotes the cumulative percentage share of total agricultural land that is either suitable or very suitable to the cultivation of maize, rice and wheat, according to the classification of the FAO, IIASA, Global Agro-Ecological Zones (GAEZ); www.fao.org/ag/AGL/agll/gaez/index.htm
Cash crops: Denotes the cumulative percentage share of total agricultural land that is either suitable or highly suitable to the cultivation of bananas, cotton or sugarcane according to the classification of the FAO, IIASA, Global Agro-Ecological Zones (GAEZ); www.fao.org/ag/AGL/agll/gaez/index.htm
Population density: Denotes the log of population per square kilometre of agricultural land in the early or middle of the colonial period. For most New World countries the year 1700 or 1800 is used. For African countries and most Asian countries the year 1900 is used. Square kilometres of agricultural area refer to a year around 1960 and are derived from Taylor and Hudson (1972: pp. 303-305). Population estimates for 1700, 1800 and 1900 are from McEvedy and Jones (1978).
Iberian and British colony dummies: Dummy variables set at 1 for countries that have been colonized by respectively an Iberian country (Spain or Portugal) or by Great Britain.
Catholicism: Denotes the log of the percentage share of Catholics in the total population in 1965 or a year close to 1965. The data are derived from Taylor and Hudson 1972.

Table A.3.3: Correlation matrix corresponding to the regression variables listed in table A.3.2 and table 3.3 (pair-wise sample)

	Land Gini	Mean temp	Ranching	Food crops	Cash crops	British C.	Iberian C.	Catholicism
Land Gini	1.00							
Mean temperature	-0.02	1.00						
Ranching (dummy)	0.19	-0.03	1.00					
Food crops	-0.15	0.31	-0.03	1.00				
Cash crops	0.26	0.52	-0.06	0.29	1.00			
British Colony (dummy)	-0.07	0.21	0.21	0.04	0.11	1.00		
Iberian Colony (dummy)	0.50	0.25	0.19	0.21	0.53	-0.22	1.00	
Catholicism	0.45	-0.09	0.22	0.18	0.22	-0.16	0.54	1.00

Source: see tables A.3.1 and A.3.2

Table A.3.4: Comparing initial conditions and paths of colonial development in British Malaya, Sierra Leone and Zambia

	British Malaya	Sierra Leone	Zambia
Geography & endowments:	Tropical location	Tropical location	Semi-tropical location
	High potential for cash crop cultivation	High potential for cash crop cultivation	Mediocre potential for cash crop cultivation
	Various natural harbours	Natural harbour in Freetown	Land locked region with huge transport barriers
	Low population density	Low population density	extremely low population density
	High incidence of tropical diseases (malaria)	High incidence of tropical diseases (malaria)	Mediocre incidence of tropical diseases
Indigenous economy & society:	Heterogeneous tribal society	Heterogeneous tribal society	Heterogeneous tribal society
	Subsistence farming	Subsistence farming	Subsistence farming
	Shifting cultivation predominant	Shifting cultivation predominant	Shifting cultivation predominant
	Major food crop: rice	Major food crop: rice	Major food crop: maize
	Egalitarian distribution of land	Egalitarian distribution of land	Egalitarian distribution of land
	Absence of formal land property rights	Absence of formal land property rights	Absence of formal land property rights
	Chinese commercial activity in the region and unifying Islamic rule under a Sultanate	Arab commercial activity in the region and tribal warfare (Mende vs Temne)	Region destabilized by on going slave raids and tribal warfare
British colonial rule:	1874-1957	1896-1961	1889-1964
	Principle of indirect rule	Principle of indirect rule	Administration outsourced to BSAC
	Principle of balanced budgets	Principle of balanced budgets	Continuously negative balance sheets
	Agricultural commercial objectives	Agricultural commercial objectives	Military and political strategic objectives
Land & labour market outcomes:	Booming plantation economy	No plantation economy	Marginal plantation economy
	Land Gini in 1960: 0.68	Land Gini in 1970: 0.44	Land Gini in 1971: 0.70
	Receptiveness of indigenous people to cash crop cultivation and commercial activities	Large resistance against colonial rule obstructing the settlement of colonial planters	Weak resistance against colonial rule allowing harsh forms of labour exploitation in mining industry
	Large scale import of Chinese and Indian indentured labour	Settlement of freed slaves in the colony, not the protectorate	Indigenous people forced to offer wage labour via implementation of monetary head taxes
	Forced registration of land	No registration of land in the protectorate	Forced introduction of land reserves for tribes
	Introduction of legal title to land and conversion of unoccupied land into Crown land	Withdrawal of plan to convert land in the protectorate into Crown land	Introduction of legal title to land and conversion of unoccupied land into Crown land
	Large scale redistribution of land through sales and grants	No effective British interference in the land market of the protectorate	Sale and grants of Crown land to attract European settlers, acquired land often lays wasted

Table A.4.1: Percentages of the average per capita disposable income earned by primary, secondary and tertiary educated, Latin America versus the rest of the world (absolute values in 1995 US $)

	average per capita disposable income	Average disposable income of tertiary educated	primary educated % of average p.c.	secondary educated % of average p.c.	tertiary educated % of average p.c.
Argentina	4779.1	13027.7	73.4	101.2	272.6
Bolivia	673.1	1637.1	82.2	108.8	243.2
Brazil	2716.2	7635.1	81.4	126.2	281.1
Chile	3557.9	11516.9	65.1	96.7	323.7
Colombia	1378.8	3096.7	75.5	101.8	224.6
Ecuador	108.6	251.2	75	110.9	231.4
Mexico	2527.7	5608.9	59.4	85.9	221.9
Peru	1629.7	3831.4	55	78.5	235.1
Venezuela	2607.9	5878.1	73.5	96.2	225.4
Latin America average	**2219.9**	**5831.5**	**71.2**	**100.7**	**251.0**
Algeria	1179.9	2352.7	69.7	140.1	199.4
Australia	12209.1	16555.5	69.7	74.4	135.6
Austria	18858.7	26421	73.8	98	140.1
Azerbaijan	202.3	219.7	92.5	101.1	108.6
Belarus	952.3	1395.1	75.4	104.8	146.5
Belgium	17102.9	20934	80.4	89.3	122.4
Bulgaria	1002.6	1591.1	76.9	103.7	158.7
Canada	12957.7	16106.4	52	82.3	124.3
China	389.7	684.7	83.9	112	175.7
Croatia	3160.2	5520.8	77	99.2	174.7
Czech rep.	2846.2	4764.5	62.5	102.8	167.4
Denmark	16779.7	22384.1	82.4	98.4	133.4
Egypt	803.5	2020.8	62.6	121.9	251.5
Estonia	2021.2	2615.4	73.5	92.3	129.4
Finland	16539.3	22906.9	85.6	90.8	138.5
France	18118.3	24912.6	88.9	96.8	137.5
Germany	19038.8	28824.8	83.9	102.5	151.4
Greece	8616.6	13045.6	77.4	116.9	151.4
Hong Kong, China	18499.4	23216.7	69.9	109.2	125.5
Hungary	2810.5	5747.5	71.6	113.7	204.5
India	317.9	527.7	84.7	122.5	166
Indonesia	781.2	1631.9	70.4	106.4	208.9
Ireland	14882.1	18543.1	65.3	100.4	124.6
Israel	9717.6	12438.5	54.7	97.4	128
Italy	15395.2	24955.6	76	109	162.1
Japan	25745.3	28860.5	91.5	96.3	112.1
Jordan	997.1	2592.4	66.3	124.1	260
Kazakhstan	633.2	691.4	87	103.1	109.2
Kuwait	8627.2	12785.5	64	130.4	148.2
Latvia	1328.9	1896.4	81.4	95.6	142.7
Lithuania	1364.3	2207.4	79.8	91.5	161.8
Malaysia	2798.9	5354.3	65.7	99.2	191.3
Morocco	862.1	1807.8	74.5	143.3	209.7
Netherlands	16183.3	21184	84.5	93.8	130.9
New Zealand	9827.3	15173.4	68	75.2	154.4
Nigeria	185.7	299.2	88	118.2	161.1
Norway	19596.8	26318.5	87.7	92.1	134.3
Pakistan	366.2	629.8	89.8	126.1	172
Philippines	669.1	1130.8	56	89	169
Poland	2785.4	3749.2	80.6	105.6	134.6
Portugal	8448.5	15232.7	81.1	123.1	180.3

Romania	966.2	1579.8	77.5	101	163.5
Russia	1041.6	1508.2	72.1	106.9	144.8
Saudi Arabia	3711.5	10321.8	71	141.9	278.1
Singapore	17067.3	38196.7	58.1	89.3	223.8
Slovakia	1955.2	3323.9	69.5	113.7	170
Slovenia	6931.0	12080.7	79.2	100.6	174.3
South Africa	2310.0	4638.5	74.3	110.2	200.8
South Korea	7916.1	10702.6	75.5	94.4	135.2
Spain	10775.4	17660.8	71.4	104.1	163.9
Sweden	14531.2	20372.8	82.8	88.3	140.2
Switzerland	29290.0	40420.2	64.9	95.7	138
Taiwan	9328.6	14953.8	63	100.8	160.3
Thailand	1568.2	3813.9	76.9	118.3	243.2
Tunisia	1459.2	2966.5	72.7	143.2	203.3
Turkey	1516.0	3016.8	93.1	111	199
Turkmenistan	844.0	955.4	93.4	99.6	113.2
Ukraine	272.0	383.8	69.1	110.2	141.1
United Arab Emirates	9025.5	21408.6	68.9	131.9	237.2
United Kingdom	14896.2	19573.6	72.7	93.8	131.4
USA	19659.8	26757	38.7	67.8	136.1
Vietnam	269.7	664.9	93.7	103.8	246.5
Rest of the world average	**7595.8**	**11218.2**	**74.9**	**105.1**	**164.2**

Source: Euromonitor International (2007) *World Income Distribution* 2006/2007, 4th edition, pp. 102-107

Table A.4.2: Gross Enrolment Rates in Latin American Primary Schooling, 1870-2000

	1870	1880	1890	1900	1910	1920	1930/5	1940/5	1950/5	1960	1970	1980	1990	2000
Argentina		20.4	38.0	46.3	58.4	78.3	76.3	91.0	97.0	97	105	106	106	120
Bolivia				22.7	23.2*	24.3**	25.8	35.7	47.0	67	68	84	95	115
Brazil	12.2	14.0	13.8	20.4	24.6	29.4	44.6	54.4	67.4	72	87	98	106	151
Chile		18.5	32.0	40.8	71.8	70.3	83.5	83.7	93.0	105	119	109	100	103
Colombia					49.8*	62.5	64.5	66.3	76.3	77	103	124	112	112
Costa Rica			23.7	43.2	51.0	54.8	66.5	71.5	85.5	100	112	106	101	108
Dominican Republic							41.0	62.7	74.7	99	107	118	97	118
Ecuador						36.0*	39.8	61.0*	70.7	83	97	113	116	116
El Salvador						25.5*	23.3	34.8	54.8	79	87	74	79	111
Guatemala						36.3	31.8	34.7	39.0	49	58	71	79	102
Haiti						18.0*	22.3*	20.3	33.7	38	49	67	56	
Honduras							22.5	30.3	45.2	61	93	95	108	106
Jamaica**	25.8*	41.6	63.6	63.3	56.1	55.3	70.4	69.6	80.9	100	102	103	108	100
Mexico		31.2	30.2	30.8	31.0	38.5	71.2	67.2	77.5	81	104	120	114	110
Nicaragua									25.7	69	80	98	101	103
Panama						47.7**	64.2	66.8	94.0	97	110	106	106	109
Peru				19.2*	23.8*	28.8*	45.4	64.4	85.0	83	107	114	118	121
Trinidad & Tobago	10.0*	19.4*	44.4	51.7	69.0	66.3	70.7	69.3	80.0	112	107	99	95	101
Uruguay				34.5	48.7	53.8*	58.7	70.2	75.5	115	110	107	108	109
Venezuela							20.5*	46.2	71.3	100	95	93	96	106

Sources: Enrolment rates 1870-1920 obtained from Lindert 2004: pp. 91-93 and Mitchell 1993; Enrolment rates 1930-1955 obtained from UNESCO, *World Survey of Education*, Volume 2, 1958; Enrolment rates 1960-1990: UNESCO, *Statistical Yearbook*, various issues from 1966-1998; Enrolment rates 2000 from UNESCO, *Global Education Database*, www.qesdb.cdie.org/ged/index.html

Notes: In order to calculate gross enrolment rates for the period 1870-1920 the original enrolment rates referring to the age group (5-14) as presented in Lindert (2004: pp. 91-93) were multiplied by $10 / X_a$, where X_a stands for the amount of grades in primary school in country a.

* These enrolment rates are based on Mitchell's (1993) enrolment data and an estimate of the percentage share of the age-group (5-14) in total population for the closest year available. The sample of eleven countries for which these estimates are calculated has an average of 25.4%, a minimum of 22.9% (Venezuela 1920) and a maximum of 28.2% (Trinidad & Tobago 1891) and a standard deviation of 1.5%. On the basis of this cross-section result the potential margin of error falls within the range of – 2.5% to +2.5%. Population figures were obtained from Maddison (2003).

** Jamaica includes secondary school enrolment to 1895; Bolivia 1920: figure refers to 1924; Panama 1920: figure refers to 1922.

*** Nicaraguan estimate of age group (5-14) based on medium variant of UN, *World Population Prospects 2004*, www.esa.un.org/unpp/

Table A.4.3: Percentage shares of female in primary, secondary and tertiary enrolment, Latin America versus a selection of non Latin American countries, 1890-1997

	primary			secondary		tertiary	
	1890/1902	1950/54	1990/97	1950/54	1990/97	1950/54	1990/97
Argentina	46.1	48.2	49	30.7	52*	18.1	53
Brazil		49.1	48	44.1	52	22.4	52
Chile	51.6	48.4	49	51.8	51	30.0	45
Colombia		49.0	50	39.2	54	12.5	50
Cuba	46.8	50.6	49	43.4	53	40.3	57
Dominican Rep.		49.6	49	47.5	57		57
Ecuador		45.2	49	29.7	50	15.4	
El Salvador	43.3	49.0	49	39.8	55	10.9	48
Guatemala	32.8	42.9	46	41.9	47		
Jamaica		51.4	49	54.6	52	25.9	
Mexico		47.5	49	28.5	50	19.3	47
Panama		48.5	48	47.9	51	46.2	58
Paraguay		46.0	48	38.7	50	29.5	55
Peru		40.2	49	35.8	48	22.7	35*
Uruguay	45.1	48.9	49	51.8	53		53*
Venezuela		50.1	50	32.6	57	16.0	41
Latin America average	**44.3**	**47.8**	**48.8**	**41.1**	**52.0**	**23.8**	**51.2**
Europe and USA							
USA	48.5	48.4	49	51.3	49	30.1	54
France	49.5	49.7	48	50.1	50	34.0	53
Netherlands	48.0	48.7	50	42.3	47	15.4	44
Switzerland	44.5	49.3	49	45.6	47	12.8	35
Spain	42.9	50.4	48	35.2	51	10.4	51
Portugal	31.9	45.0	48	46.6	51	24.9	56
Greece	23.1	46.9	48	33.0	48		48
Serbia/Yugoslavia	14.3	46.0	49	43.0	49	32.2	53
Asia							
Japan	30.9	49.4	49	47.6	49	9.3	35
India	9.3**	29.1	41	14.5	37	4.9	33
China		39.0	46	31.9	41	9.1	33
Ceylon/Sri Lanka	5.0	44.5	48	47.1	57	12.3	42
Burma/Myanmar	7.8	45.0	48	47.8	49	22.7	55
Africa and Middle East							
Turkey		37.1	47	25.0	37	19.6	34
Egypt		35.6	44	29.7	43	15.4	36
Ghana		25.4	45	11.5	44	7.1	
Uganda		25.7	40	15.0	39.0	12.9	27
Nigeria		22.0	43	8.5	42	4.3	29*

Sources: Figures for primary enrolment 1890-1902 retrieved from Lindert (2004: p. 95); Figures for 1950-1954 obtained from UNESCO, *World Survey of Education II*, 1958 and figures for 1990-1997 from USAID, *Global Education Database* (GED)

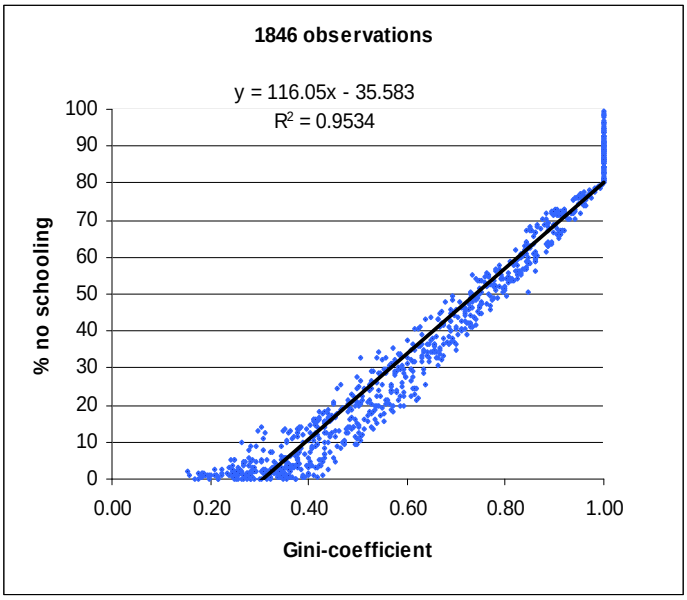
Notes: * Nigeria: figure refers to 1985; Argentina: figure refers to 1985; Peru: figure refers to 1980; Uruguay: figure refers to 1980; ** India 1900 is an unweighted average of Bombay, Punjab and Madras.

Table A.4.4: Gini coefficients of the attainment distribution of the working age population (25-64), Latin America versus East Asia, 1950-2000

	1950	1960	1970	1980	1990	2000
Argentina	0.40	0.42	0.38	0.38	0.35	0.36
Bolivia		0.75	0.78	0.75	0.70	0.66
Brazil		0.74	0.72	0.66	0.61	0.62
Chile	0.57	0.53	0.48	0.47	0.43	0.42
Colombia	0.70	0.67	0.70	0.61	0.62	0.59
Costa Rica	0.48	0.46	0.50	0.50	0.50	0.50
Cuba		0.53	0.36	0.42	0.43	0.38
Dominican Rep.		0.66	0.69	0.66	0.63	0.64
Ecuador	0.75	0.65	0.65	0.55	0.59	0.55
El Salvador	0.86	0.84	0.79	0.66	0.69	0.70
Guatemala	0.91	0.89	0.88	0.81	0.81	0.77
Haiti	1.00	1.00	1.00	0.97	0.84	0.82
Honduras		0.83	0.84	0.73	0.63	0.59
Jamaica		0.44	0.32	0.37	0.39	0.40
Mexico	0.69	0.70	0.63	0.66	0.53	0.48
Nicaragua	0.84	0.84	0.81	0.78	0.73	0.64
Panama	0.64	0.58	0.59	0.52	0.46	0.44
Paraguay	0.63	0.53	0.50	0.49	0.46	0.47
Peru		0.71	0.66	0.57	0.56	0.48
Uruguay		0.50	0.49	0.44	0.45	0.42
Venezuela	0.75	0.74	0.75	0.58	0.58	0.55
LA average	**0.71**	**0.67**	**0.64**	**0.60**	**0.57**	**0.55**
Hong Kong		0.66	0.64	0.54	0.43	0.37
Indonesia		0.94	0.79	0.68	0.81	0.66
Korea, Rep.		0.79	0.65	0.50	0.31	0.28
Malaysia		0.85	0.73	0.64	0.57	0.43
Philippines	0.81	0.63	0.54	0.45	0.38	0.38*
Singapore		0.84	0.75	0.73	0.57	0.38
Taiwan		0.75	0.68	0.49	0.48	0.40
Thailand		0.68	0.58	0.45	0.55	0.52
Asia average		**0.77**	**0.67**	**0.56**	**0.51**	**0.43**

Source: Authors own calculations based on Barro and Lee 2001
Notes: *Philippines 1995

Figure A.4.5: Educational gini versus the percentage share of the working age population (age 25-64) with no schooling, 1950-2000



Source: Authors own calculations based on Barro and Lee 2001.

Table A.4.6: Standard deviation and Coefficient of Variation of the attainment distribution of the working age population (25-64), Latin America versus East Asia, 1950-2000

	Standard deviation							Coefficient of Variation						
	1950	1960	1970	1980	1990	2000	δ 1960-2000	1950	1960	1970	1980	1990	2000	δ 1960-2000
Argentina	3.0	3.5	3.7	4.0	4.3	4.8	1.3	0.68	0.70	0.63	0.61	0.56	0.57	-0.13
Bolivia		5.3	5.0	5.2	5.5	5.9	0.5		1.27	1.36	1.29	1.17	1.06	-0.20
Brazil		3.7	3.6	3.5	4.2	4.8	1.1		1.29	1.22	1.18	1.13	1.05	-0.24
Chile	4.2	4.3	4.3	4.7	5.0	5.2	0.9	0.94	0.86	0.79	0.78	0.70	0.66	-0.20
Colombia	2.7	3.4	3.3	4.2	4.6	4.9	1.5	1.21	1.16	1.23	1.05	1.05	0.99	-0.18
Costa Rica	2.8	3.0	3.2	4.1	4.8	5.1	2.1	0.81	0.76	0.88	0.87	0.86	0.85	0.08
Cuba		3.2	2.8	4.1	4.7	4.7	1.5		0.83	0.57	0.67	0.70	0.60	-0.23
Dominican Rep.		2.6	3.4	3.8	4.7	5.6	3.0		1.11	1.19	1.12	1.09	1.08	-0.02
Ecuador	3.0	3.3	3.4	4.8	5.8	5.9	2.6	1.29	1.10	1.07	0.89	0.97	0.90	-0.20
El Salvador	2.2	2.6	3.2	3.7	4.3	5.1	2.6	1.57	1.51	1.39	1.13	1.21	1.14	-0.37
Guatemala	2.1	2.4	2.5	3.4	3.9	4.4	1.9	1.77	1.70	1.69	1.47	1.49	1.40	-0.30
Haiti	1.2	1.6	2.0	3.0	3.6	4.0	2.5	2.22	2.22	2.22	2.06	1.52	1.50	-0.72
Honduras		2.5	2.6	2.9	3.9	4.1	1.6		1.48	1.52	1.25	1.07	1.01	-0.47
Jamaica		2.6	2.3	3.2	3.9	4.3	1.7		0.74	0.55	0.66	0.65	0.64	-0.10
Mexico	2.7	2.8	3.5	4.4	5.1	5.1	2.3	1.15	1.18	1.06	1.10	0.86	0.76	-0.42
Nicaragua	2.3	3.2	3.8	3.9	4.6	4.7	1.6	1.52	1.53	1.46	1.38	1.27	1.07	-0.45
Panama	3.8	4.0	4.5	5.0	5.5	5.6	1.6	1.04	0.93	0.98	0.85	0.75	0.71	-0.23
Paraguay	2.7	2.9	3.3	3.9	4.4	4.6	1.6	1.06	0.88	0.90	0.85	0.77	0.80	-0.08
Peru		3.7	4.3	5.0	5.3	5.6	1.9		1.22	1.09	0.91	0.90	0.76	-0.46
Uruguay		4.3	4.3	4.3	5.0	4.9	0.6		0.85	0.82	0.75	0.74	0.68	-0.18
Venezuela	2.6	3.2	3.8	4.7	4.8	5.3	2.1	1.28	1.26	1.30	0.95	0.99	0.94	-0.31
LA average	**2.7**	**3.2**	**3.5**	**4.1**	**4.7**	**5.0**	**1.7**	**1.27**	**1.17**	**1.14**	**1.04**	**0.97**	**0.91**	**-0.26**
Hong Kong		5.3	5.3	5.8	5.8	5.6	0.4		1.11	1.05	0.86	0.69	0.60	-0.51
Indonesia		2.1	3.1	3.5	4.7	5.0	3.0		1.88	1.37	1.14	1.42	1.07	-0.81
Korea, Rep.		4.4	5.1	5.3	4.6	4.7	0.3		1.37	1.06	0.78	0.49	0.45	-0.92
Malaysia		3.6	3.8	4.7	5.1	5.4	1.8		1.55	1.24	1.04	0.91	0.68	-0.87
Philippines	3.4	3.9	4.2	4.4	4.2	4.4	0.5	1.42	1.06	1.00	0.78	0.69	0.60	-0.46
Singapore		4.8	4.8	4.6	5.1	4.9	0.2		1.52	1.28	1.25	0.92	0.61	-0.91
Taiwan		4.3	5.0	5.0	5.3	5.4	1.2		1.28	1.13	0.78	0.71	0.64	-0.65
Thailand		3.9	3.3	3.0	4.8	5.3	1.4		1.13	0.94	0.80	0.89	0.87	-0.26
East Asia average		**4.0**	**4.3**	**4.5**	**4.9**	**5.1**	**1.1**		**1.36**	**1.13**	**0.93**	**0.84**	**0.69**	**-0.67**

Source: Authors own calculations based on Barro and Lee 2001

Table A.4.7: Unadjusted Grade Distribution Ratio's (1-6) in the developing world, 1960-2005

	GDR 1-6				
	1960/5	**1970/5**	**1980/5**	**1990/5**	**2000/5**
Afghanistan	0.46	0.60	0.67	0.66	0.34
Bahrain	0.43	0.97	0.91	0.94	0.92
Bangladesh	0.32	0.39	0.39	0.49	0.70
India	0.42	0.50	0.54	0.67	0.72
Iran	0.67	0.66	0.71	0.98	1.00
Myanmar (Burma)		0.40	0.43		0.66
Nepal	0.28	0.32	0.46	0.44	0.47
Pakistan	0.26	0.63	0.54		0.58
Sri Lanka		0.79	0.96	1.00	1.00
South & West Asia	**0.40**	**0.59**	**0.62**	**0.74**	**0.71**
Hong Kong	0.69	0.88	0.96	1.00	1.00
Indonesia	0.49	0.55	0.56	1.00	0.87
Korea, Rep.	0.73	0.92	0.94	1.00	0.98
Laos	0.29	0.33	0.36	0.37	0.51
Malaysia	0.82	0.81	0.94	0.89	0.96
Mongolia		0.78	0.32	0.68	0.83
Papua New Guinea	0.30		0.67	0.65	0.61
Philippines	0.59	0.69	0.79	0.71	0.81
Singapore	0.91	1.00	1.00	1.00	
Thailand	0.36	0.43	0.77	1.00	0.98
Vietnam	0.34	0.45	0.73		0.91
East Asia & Pacific	**0.55**	**0.69**	**0.73**	**0.83**	**0.85**
Argentina	0.63	0.70	0.75	0.83	0.92
Barbados	0.82	0.87	1.00		1.00
Bolivia	0.32	0.44	0.47	0.63	0.83
Brazil	0.17	0.35	0.45	0.50	0.84
Chile	0.49	0.69	0.86	0.86	1.00
Colombia	0.20	0.37	0.56	0.70	0.74
Costa Rica	0.41	0.68	0.85	0.79	0.90
Cuba	0.34	0.54	0.98	0.99	1.00
Dominican republic	0.24	0.34	0.49		0.72
Ecuador	0.35	0.54	0.64	0.71	0.81
El Salvador	0.29	0.46	0.54	0.67	0.70
Guatemala	0.26	0.33	0.39		0.49
Guyana	0.84	1.00	0.92	0.87	0.90
Honduras	0.20	0.33	0.39	0.56	0.61
Jamaica		0.69	0.92	0.96	0.94
Mexico	0.32	0.52	0.64	0.82	0.88
Nicaragua	0.18	0.35	0.32	0.41	0.59
Panama	0.57	0.59	0.79	0.80	0.83
Paraguay	0.31	0.43	0.52	0.64	0.82
Peru	0.43	0.56	0.71	0.64	0.87
Trinidad & Tobago	0.83	0.87	0.93	1.00	1.00
Uruguay	0.58	0.79	0.82	0.85	0.83
Venezuela	0.33	0.65	0.72	0.73	0.86
Latin America	**0.41**	**0.57**	**0.68**	**0.75**	**0.83**

Angola		0.20	0.26	0.33	
Benin	0.55	0.64	0.64		0.57
Botswana	0.55	1.00	0.80	0.98	0.94
Burkina Faso	0.55	0.67	0.61	0.74	0.71
Burundi		0.52	0.71	0.89	0.60
Cameroon		0.55	0.63	0.70	0.76
Central African Republic	0.31	0.45	0.58	0.52	
Chad	0.24	0.42		0.37	0.42
Congo, Dem. Rep.		0.45		0.64	0.64
Congo, Rep.	0.39	0.66	0.75	0.69	0.68
Ethiopia	0.30	0.53	0.34	0.39	0.42
Gabon	0.40	0.49	0.49	0.55	0.63
Gambia, The	0.53	1.00	0.72	0.72	0.67
Ghana	0.69	0.79	0.77	0.77	0.80
Guinea		0.60	0.68	0.55	0.68
Ivory coast	0.38	0.74	0.83	0.75	0.79
Kenya	0.48	0.66	0.65	0.80	0.81
Lesotho	0.43	0.59	0.51	0.72	0.61
Madagascar	0.31	0.35	0.51	0.35	0.31
Malawi		0.43	0.43	0.36	0.48
Mali	0.56	0.52		0.52	0.63
Mauritania	0.87	0.48	0.83	0.72	0.69
Mauritius	0.80	0.82	0.94	1.00	1.00
Niger	0.35	0.59	0.80	0.84	0.64
Nigeria	0.53	0.48	0.80	0.79	0.75
Rwanda	0.19	0.48	0.60	0.57	0.37
Senegal	0.53	0.84	0.79	0.77	0.71
Sudan		0.56	0.72	0.77	0.81
Swaziland		0.64	0.65	0.74	0.78
Tanzania		0.61	1.00	0.84	0.79
Togo		0.52	0.61	0.52	0.66
Uganda	0.68	0.71	0.61	0.58	0.57
Zambia	0.58	0.70	0.83	0.87	0.80
Zimbabwe		0.70	0.49	0.85	0.85
Sub Saharan Africa	**0.49**	**0.60**	**0.66**	**0.67**	**0.68**
Algeria		0.66	0.90	0.85	1.00
Cyprus	0.87	1.00	1.00	1.00	1.00
Egypt	0.75	0.80	0.82		1.00
Iraq	0.49	0.72	0.75	0.84	0.72
Israel	0.96	1.00	0.95	1.00	0.96
Jordan	0.81	0.72	1.00	1.00	0.96
Kuwait	0.49	0.97	0.60	0.93	1.00
Libya	0.44	0.51	0.87		1.00
Morocco	0.83	0.68	0.70	0.72	0.84
Oman			0.69	0.96	0.92
Qatar	0.18	0.67	0.85	0.92	0.90
Saudi Arabia	0.39	0.64	0.67	0.82	0.86
Syria	0.61	0.66	0.75	0.83	0.86
Tunisia	0.54	0.80	0.81	0.89	1.00
Turkey	0.45	0.71	0.76	0.95	0.95
N. Africa & Middle East	**0.60**	**0.75**	**0.81**	**0.90**	**0.93**
Developing world average	**0.49**	**0.62**	**0.70**	**0.75**	**0.78**

Sources: Authors own calculations based on UNESCO, *Statistical Yearbook*, 1966-1998 and UNESCO, *Institute for Statistics* (UIS); www.uis.unseco.org

Notes: For each country the first available observation in the first five years of the decade is included. For 60 countries there is at least one observation each decade. Countries with less than three observations in five decades, for example South Africa, Bhutan, Mozambique and Haiti, were removed. In some cases the year of observation of the percentage distribution and the total number of students enrolled does not match. A maximum difference of two years was allowed. The enrolment figures of primary and secondary schooling always refer to the same year. In a few cases the number of students enrolled in secondary education was derived by the interpolation of two surrounding years. The three standard categories of secondary schooling reported in the yearbook consist of general secondary education, vocational education and teacher training. General secondary education accounts for the lion share of all students and is regularly reported, occasionally figures for teacher training or vocational education are missing. These were estimated with a percentage share obtained from the closest year with a complete observation. In some countries the number of secondary school students in the early post-war years was almost zero. For example, The Central African Republic in 1970 reported a total number of 457 students enrolled in secondary school. For total enrolment estimates in primary schooling interpolation methods were not applied. A few observations were removed because they were suspect and likely to be caused by either typing or reporting errors.

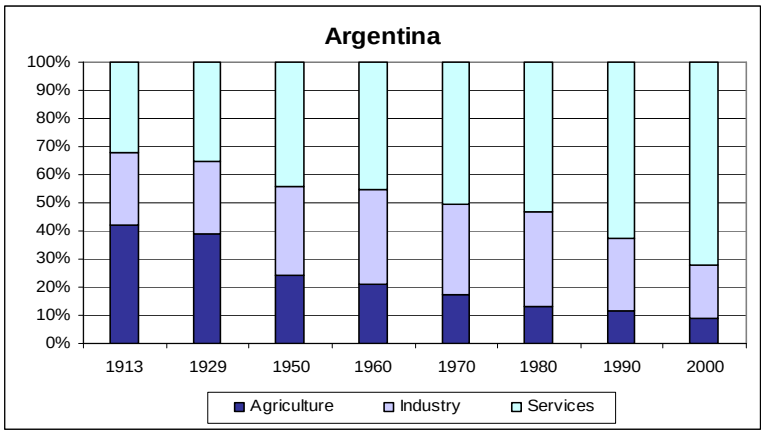
Table A.5.1: Export specialisation patterns and openness to trade in Latin America, 1906-2000

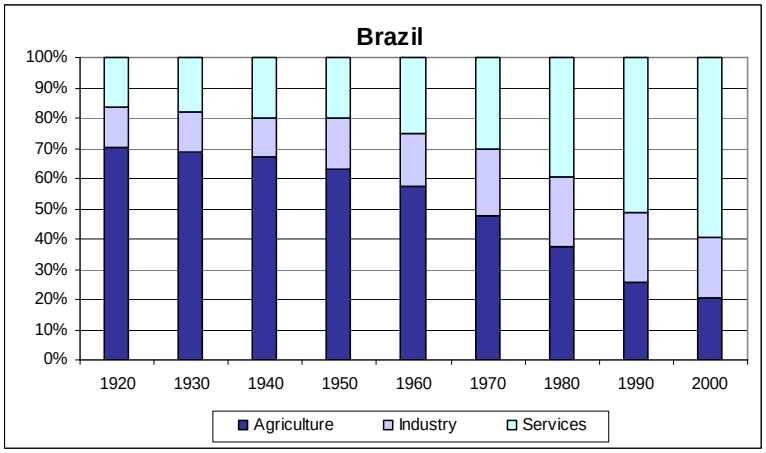
	key export commodities export value as % of total **1906**	key export commodities export value as % of total **ca. 1960**	key export sector ISIC 1 export value as % of total **2000**	Trade Openness imports and exports as % of GDP **1960**	Trade Openness imports and exports as % of GDP **2000**
Argentina	cereals 0.41, wool 0.20	meat 0.25, cereals 0.21	Food, beverages manuf 0.24	15	22
Bolivia		tin ore 0.65, silver 0,05	mining 0,31		45
Brazil	Coffee 0.53, rubber 0.27	coffee 0.56, fibers 0.06	metal manuf 0,31	14	23
Chile	nitrates 0.80, copper 0.07	copper 0.66, iron ore 0.11	basic metals manuf 0,30	29	59
Colombia		coffee 0.72, petroleum 0.17	mining 0,38	30	41
Costa Rica	bananas 0.54, coffee 0.41	coffee 0.47, bananas 0.26	metal manuf 0,44	48	94
Cuba	sugar 0.60, tobacco 0.30	sugar 0.87, nickel ore 0.064	food, bev, tobacco 0.41		34
Dominican Republic*		sugar 0.51, coffee 0.11	textile manuf 0.38	44	100
Ecuador		bananas 0.59, cocoa 0.14	mining 0,45	36	68
El Salvador		coffee 0.48, cotton 0.94	agriculture 0,27	45	70
Guatemala		coffee 0.50, textile fibres 0.16	agriculture 0,43	27	49
Honduras		bananas 0.40, coffee 0.17	agriculture 0,51	44	98
Jamaica	bananas 0.47, rum 0.07	sugar 0.32, alumina ore 0.23	chemicals 0,59	71	97
Mexico	Textile fibers 0.26, copper 0.21	cotton 0.21, coffee 0.09	metal manuf 0,67	20	64
Nicaragua		cotton 0.38, coffee 0.23	agriculture 0,64	50	75
Panama		bananas 0.42, petrol. prod 0.40	agriculture 0,59		138
Paraguay		meat 0.26, wood 0.12	agriculture 0,48	35	55
Peru	sugar 0.25, metal ore 0.21	cotton 0.18, guano 0.18	basic metals manuf 0,26	42	34
Trinidad and Tobago	cocoa 0.52, sugar 0.28	petrol. prod 0.78, sugar 0.08	chemicals 0,57	121	105
Uruguay	wool 0.39, hides & beef 0.39	wool 0.35, meat 0.20	food, beverages manuf 0.38	32	40
Venezuela		Petrol crude 0.67, products 0.23	mining 0.60	43	45

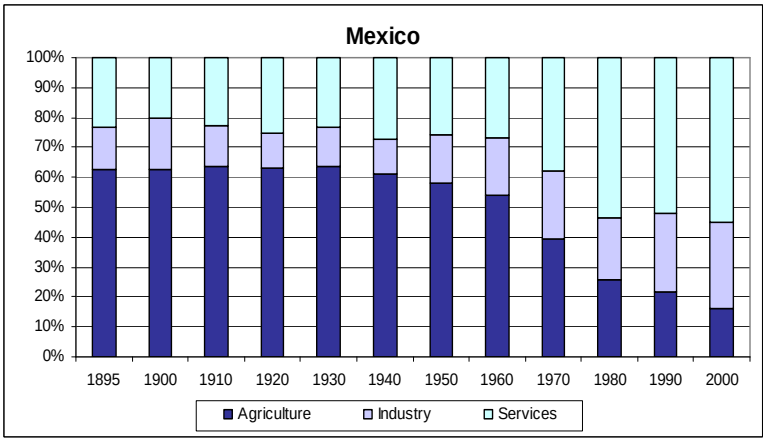
Sources: Figures for 1906 from the Department of Commerce and Labor (1909) *Statistical Abstract of Foreign Countries*, Washington D.C.; for 1960 from UN, *International Yearbook of Trade Statistics* and World Bank, *World Development Indicators* 2006; for 2000 from UN, *International Trade Statistics Yearbook* and World Bank, *World Development Indicators* 2006.

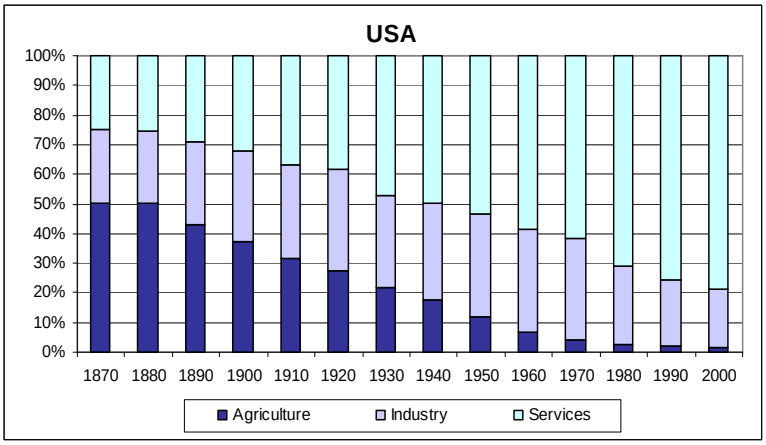
Notes: * Dominican Republic figures refer to 1995 in stead of 2000.

Figure A.5.2: The composition of employment in Argentina, Brazil, Mexico and the USA, 1870-2000









Sources: Argentina: IEERAL 1986 and Mitchell (2003) for 1913-1929 and de Vries and Timmer (2007) for 1950-2000; Brazil: Mitchell (2003) for 1920-1940, de Vries and Timmer (2007) for 1950-2000; Mexico: INEGI (1986) for 1895-1980, ECLAC (2005) for 1990-2000; USA: Mitchell (2003) for 1870-1970 and the GGDC Total Economy Database, www.ggdc.net, for 1980-2000.

In the USA the major shift of employment from agriculture to industry and services took place in the half century between 1880 and 1930: the share of agricultural employment decreased by 28% (from 50 to 22%). In Mexico an identical decline of 28 percentage points took place in just two decades between 1960 and 1980 (54 - 26%). In the half century between 1950 and 2000 the share of Mexican agricultural employment declined by 42% (58 - 16%). A similar decline occurred in Brazil, between 1950 and 2000 agricultural employment decreased by 42 percentage points, from 63 to 21% of total employment.

The timing and intensity of structural change in Brazil and Mexico are exemplary for many other countries in the region, but because of their traditionally high level of urbanisation and low rates of agricultural employment, Argentina and Uruguay formed an exception to this pattern. The Argentinean pattern of structural change more closely resembled the US than its Latin neighbours: a decline of 28 points between 1929 and 1980, with a peak of 15 points between 1929 and 1950. Given its large mining sector, historical levels of agricultural employment in Chile were also significantly lower than in Brazil and Mexico. In some of the least developed LAC's the transition set in much later, albeit with comparable high rates of rural-urban migration. Around 1950 the country-specific shares of the agricultural sector in the total economically active population reveal the scope of the regional diversity in the sector composition of employment very well: Argentina and Uruguay recorded ca. 25% as opposed to ca. 70% in Guatemala, Honduras and Nicaragua. Chile recorded 32%, Venezuela 42%, Colombia 50%, while the shares in Bolivia, Brazil, Ecuador, Peru and Mexico ranged between 55 and 60% (ILO 1997).

Table A.7.1: The percentage share of urban own account workers in the total labour force in the USA, Canada, Chile, Costa Rica, Mexico, Panama and Venezuela, 1930-2003

	USA	Canada	Chile	Costa Rica	Mexico	Panama	Venezuela
1930	0.079		0.164				
1931		0.092					
1932							
1933							
1934							
1935							
1936							
1937							
1938							
1939							
1940	0.099		0.162		0.123		
1941		0.089					0.172
1942							
1943							
1944							
1945							
1946							
1947							
1948							
1949							
1950	0.088			0.090	0.128	0.105	0.138
1951		0.083					
1952			0.163				
1953							
1954							
1955							
1956		0.084					
1957							
1958					0.128		
1959							
1960	0.077	0.079	0.143		0.107	0.098	
1961		0.081					0.171
1962	0.086						
1963				0.092			
1964		0.081					
1965							
1966							
1967	0.066						
1968		0.069					
1969							
1970			0.170		0.163	0.110	
1971	0.063		0.187				0.190
1972		0.065					
1973	0.061			0.084			0.168
1974							
1975	0.061				0.158		0.201
1976		0.055					
1977	0.062						0.200
1978							
1979	0.065	0.063				0.140	

	USA	Canada	Chile	Costa Rica	Mexico	Panama	Venezuela
1980	0.054	0.063		0.128		0.112	
1981	0.066	0.058					0.165
1982		0.062				0.132	
1983	0.069			0.136			0.168
1984		0.066		0.127		0.131	
1985	0.069	0.068		0.142			0.228
1986			0.200	0.134	0.205	0.139	
1987	0.069	0.067		0.156	0.205		0.225
1988	0.071	0.070	0.209	0.156		0.175	
1989	0.070	0.069	0.220	0.166		0.171	0.246
1990	0.071	0.071	0.215	0.170			0.256
1991	0.072	0.072	0.213	0.178	0.214	0.171	0.257
1992	0.069	0.074	0.219	0.165			0.260
1993	0.071	0.080	0.218	0.144	0.210	0.158	0.274
1994	0.071	0.080	0.228	0.169		0.162	
1995	0.072	0.080		0.171	0.220	0.164	
1996	0.071	0.079	0.222	0.176	0.215	0.174	
1997	0.070	0.094	0.224	0.206	0.220	0.188	
1998	0.067	0.093	0.237	0.184	0.220	0.191	
1999	0.065	0.090	0.237		0.216	0.205	
2000	0.063	0.087	0.235	0.192	0.230	0.204	
2001	0.063	0.083	0.249	0.226	0.235	0.196	
2002	0.061	0.083	0.250			0.224	
2003	0.075	0.083	0.252	0.222		0.215	

Source: ILO, *Yearbook of Labour Statistics*, various issues, 1936-2005

Notes: The data are based on three different types of sources, i.e. national census reports (C), household surveys (HS) and labour force sample surveys (LFSS). Official estimates (OE) were excluded from the sample since they do not provide a consistent conceptual basis for the construction of time-series. The data are exclusively derived from sources referring to the total economically active population of the age 10 to 16 years and older. In addition the labour force had to be classified according to main economic sector. Hence, surveys excluding (parts of) the rural population were not allowed, which is the reason for the end of the Venezuelan series in 1994 (Unfortunately, many LAC's have changed from a national coverage to an urban labour force coverage in their household and labour force sample surveys in the 1990's, which largely reduced the basis for international comparisons). The reliability of the labour force data (in terms of total coverage) has been checked with the use of ILO estimates of the total economically active population. Deviations were only allowed within a maximum range of 5%. Labour force sample surveys were often excluded because of significant underestimation of the total labour force. One of the major sources of incompatibility between countries relates to the way unemployment is classified. Some countries list the unemployed in the category "employees or wage earners", others classify the unemployed as "status unknown or unemployed". This classification difference did not affect the computation of the own-account workers share as long as both groups were included as part of the total labour force. Other factors that may affect the spatial and temporal comparability of the figures relate to the special treatment (or exclusion) of military personnel or the exclusion of isolated aboriginal tribes, such as most Indian jungle populations in Latin America. Differences also relate to the methods employed to adjust labour force estimates for under-enumeration. These differences remained uncorrected (unless they exceeded the 5% benchmark of course).

Table A.7.2: The distribution of employment in the trade sector according to status in employment, Latin America versus other New World Countries, 1990-1993 (employment in thousands)

	year	self-employed (1)	Unpaid family workers (2)	employees (3)	Total (1)+(2)+(3)	% share (1) + (2)
Bolivia	1991	169	30	117	316	0.63
Brazil	1990	3149	448	4378	7975	0.45
Chile	1993	378	71	476	925	0.49
Costa Rica	1993	51	10	128	189	0.32
Colombia	1992	560	47	625	1232	0.49
Ecuador	1992	337	9	125	471	0.73
El Salvador	1992	132	27	78	237	0.67
Guatemala	1992	210	41	123	374	0.67
Honduras	1992	157	35	83	275	0.70
Mexico	1993	2486	1144	3256	6886	0.53
Peru	1991	489	62	249	800	0.69
Uruguay	1992	81	14	128	223	0.43
Venezuela	1992	764	56	712	1532	0.54
Latin American average		**8963**	**1994**	**10478**	**21435**	**0.51**
Australia	1993	295	21	1609	1925	0.16
Canada	1993	209	15	2167	2391	0.09
USA	1993	1913	86	24719	26718	0.07
New World average		**2417**	**122**	**28495**	**31034**	**0.08**

Source: ILO, *Yearbook of Labour Statistics*, 1993-1995

Table A.7.3: An overview of sources used to compute the Theil coefficient of manufacturing inter-industry wage distribution, the labour income share and the white-collar premium, Latin America and the USA, Canada and Australia, 1900-2002

Country	year	Theil coefficient of manufacturing inter-industry wage distribution			Labour income share	white collar premium	Standard and Source
		ISIC 1	ISIC 2	ISIC 3			
Argentina	1913	0.0066			0.34	na	203 sectors; Censo Comercal e Industrial de la Republica 1913, Boletin no. 20, Capital Federal, Minesterio de Agricultura, Buenos Aires 1914
Argentina	1917	0.0061			na	na	13 sectors; Anuario Estadistico 1917, Boletin no. 42, Buenos Aires 1919
Argentina	1935	0.0124			0.39	na	20 sectors; Estadistica Industrial de la Republica Argentina 1938, Buenos Aires 1940
Argentina	1937	0.0092			0.41	na	20 sectors; Estadistica Industrial de la Republica Argentina 1938, Buenos Aires 1940
Argentina	1938	0.0084			0.42	na	20 sectors; Estadistica Industrial de la Republica Argentina 1938, Buenos Aires 1940
Argentina	1950	0.0037			0.40	na	ISIC 1; UN, The Growth of World Industry, 1953-1965, National Tables, New York 1967
Argentina	1953	0.0056			0.31	na	ISIC 1; UN, The Growth of World Industry, 1953-1965, National Tables, New York 1967
Argentina	1957	0.0031			0.32	na	ISIC 1; UN, The Growth of World Industry, 1953-1965, National Tables, New York 1967
Argentina	1963	0.0032			0.52	1.30	ISIC 1; UN, The Growth of World Industry, 1958-1967, 1968 edition, New York 1970
Argentina	1971	0.0079	0.0084		na	1.63	ISIC 1 & 2; 13 & 15 sectors; UN, Yearbook of Industrial Statistics 1975, Volume 1, New York 1977
Argentina	1974	0.0063	0.0067		na	1.43	ISIC 1 & 2; 13 & 15 sectors; UN, Yearbook of Industrial Statistics 1975, Volume 1, New York 1977
Argentina	1976	0.0077	0.0083		na	1.49	ISIC 1 & 2; 13 & 15 sectors; UN, Yearbook of Industrial Statistics 1980, Volume 1, New York 1982
Argentina	1979	0.0166	0.0168		na	2.00	ISIC 1 & 2; 13 & 15 sectors; UN, Yearbook of Industrial Statistics 1982, Volume 1, New York 1984
Argentina	1982	0.0188	0.0190		na	2.00	ISIC 1 & 2; 13 & 15 sectors; UN, Yearbook of Industrial Statistics 1982, Volume 1, New York 1984
Argentina	1985	0.0195	0.0208		na	1.60	ISIC 1 & 2; 13 & 15 sectors; UN, Yearbook of Industrial Statistics 1986, Volume 1, New York 1988
Argentina	1993	0.0216	0.0299	0.0222	0.42	na	ISIC 1,2 & 3; UNIDO, International Yearbook of Industrial Statistics 1999, Vienna 1999
Argentina	1996	0.0222	0.0226	0.0265	0.29	na	ISIC 1, 2 & 3; UNIDO, International Yearbook of Industrial Statistics 2002, Vienna 2002
Argentina	1998	0.0310	0.0319	0.0361	0.40	na	ISIC 1, 2 & 3; UNIDO, International Yearbook of Industrial Statistics 2006, Vienna 2006
Argentina	1999	0.0288	0.0290	0.0333	0.43	na	ISIC 1, 2 & 3; UNIDO, International Yearbook of Industrial Statistics 2006, Vienna 2006
Argentina	2000	0.0299	0.0301	0.0345	0.44	na	ISIC 1, 2 & 3; UNIDO, International Yearbook of Industrial Statistics 2006, Vienna 2006
Argentina	2001	0.0338	0.0340	0.0385	0.40	na	ISIC 1, 2 & 3; UNIDO, International Yearbook of Industrial Statistics 2006, Vienna 2006
Bolivia	1966	0.0190	0.0190		na	na	ISIC 1 & 2; UN, The Growth of World Industry 1960-1969, Volume 1, 1970 edition, New York 1972
Bolivia	1976	0.0140	0.0172		0.31	1.69	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1980, Volume 1, New York 1982
Bolivia	1988	0.0312	0.0325		0.31	4.35	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1990, Volume 1, New York 1992
Bolivia	1998	0.0382	0.0398	0.0436	0.24	na	ISIC 1 & 2; UNIDO, International Yearbook of Industrial Statistics 2002, Vienna 2002
Brazil	1920	0.0085			0.26	na	13 sectors; Recenseamento do Brazil 1920, Volume V, Rio de Janeiro 1927

Brazil	1939	0.0089			0.21	na	19 sectors; Recenseamento do Brasil 1950, sinopse preliminar do censo industrial, Rio de Janeiro 1953
Brazil	1949	0.0132			0.28	na	ISIC 1; UN, The Growth of World Industry, 1953-1965, National Tables, New York 1967
Brazil	1953	0.0159			0.32	na	ISIC 1; UN, The Growth of World Industry, 1958-1967, 1968 edition, New York 1970
Brazil	1958	0.0204			0.30	na	ISIC 1; UN, The Growth of World Industry, 1958-1967, 1968 edition, New York 1970
Brazil	1959	na			na	2.23	ISIC 1; UN, The Growth of World Industry, 1953-1965, National Tables, New York 1967
Brazil	1962	0.0216			0.28	na	ISIC 1; UN, The Growth of World Industry, 1958-1967, 1968 edition, New York 1970
Brazil	1966	0.0257			0.24	na	ISIC 1; UN, The Growth of World Industry, 1958-1967, 1968 edition, New York 1970
Brazil	1970	0.0235			0.23	na	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1975, Volume 1, New York 1977
Brazil	1974	0.0297	0.0297		0.24	2.12	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1976, Volume 1, New York 1978
Brazil	1979	0.0239	0.0243		0.21	2.11	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1982, Volume 1, New York 1984
Brazil	1984	0.0345	0.0346		0.15	1.67	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1988, Volume 1, New York 1990
Brazil	1992	0.0366	na		0.19	na	ISIC 1,2 & 3; UNIDO, International Yearbook of Industrial Statistics 2002, Vienna 2001
Brazil	1996	0.0466	0.0482	0.0517	0.29	na	ISIC 1,2 & 3; UNIDO, International Yearbook of Industrial Statistics 1999, Vienna 1999
Brazil	1999	0.0522	0.0534	0.0589	0.25	na	ISIC 1,2 & 3; UNIDO, International Yearbook of Industrial Statistics 2006, Vienna 2006
Brazil	2000	0.0533	0.0548	0.0611	0.23	na	ISIC 1,2 & 3; UNIDO, International Yearbook of Industrial Statistics 2006, Vienna 2006
Brazil	2001	0.0576	0.0590	0.0673	0.22	na	ISIC 1,2 & 3; UNIDO, International Yearbook of Industrial Statistics 2006, Vienna 2006
Brazil	2002	0.0538	0.0551	0.0623	0.21	na	ISIC 1,2 & 3; UNIDO, International Yearbook of Industrial Statistics 2006, Vienna 2006
Chile	1910	0.0077			0.30	na	16 sectors; Estadistica Industrial de la Republica de Chile, 1910
Chile	1925	0.0053			0.32	3.01	17 sectors; Anuario Estadistico de la Republica de Chile, Vol. IX, 1925, Santiago de Chile 1927
Chile	1953	0.0171			0.35	2.72	ISIC 1; UN, The Growth of World Industry, 1953-1965, National Tables, New York 1967
Chile	1957	0.0140			0.27	2.93	ISIC 1; UN, The Growth of World Industry, 1953-1965, National Tables, New York 1967
Chile	1963	0.0255			0.24	2.99	ISIC 1; UN, The Growth of World Industry, 1953-1965, National Tables, New York 1967
Chile	1967	0.0175	0.0177		0.25		ISIC 1; UN, The Growth of World Industry, 1960-1969, Volume 1, Edition 1970, New York 1971
Chile	1968	0.0200	0.0217		0.12	3.05	ISIC 1; UN, The Growth of World Industry, Volume 1, Edition 1973, New York 1975
Chile	1969	0.0123	0.0136		0.18	2.71	ISIC 1; UN, The Growth of World Industry, Volume 1, Edition 1973, New York 1975
Chile	1970	0.0171	0.0176		0.19	2.81	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1975, Volume 1, New York 1977
Chile	1971	0.0129	0.0136		0.23	2.67	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1976, Volume 1, New York 1978
Chile	1972	0.0082	0.0093		0.30	2.38	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1976, Volume 1, New York 1978
Chile	1973	0.0072	0.0079		0.16	2.17	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1976, Volume 1, New York 1978
Chile	1974	0.0103	0.0110		0.12	2.45	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1978, Volume 1, New York 1980
Chile	1975	0.0107	0.0113		0.12	2.39	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1978, Volume 1, New York 1980
Chile	1976	0.0148	0.0154		0.15	2.64	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1980, Volume 1, New York 1982
Chile	1977	0.0175	0.0180		0.17	2.52	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1980, Volume 1, New York 1982
Chile	1980	0.0193	0.0207		0.18	3.08	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1980, Volume 1, New York 1982
Chile	1984	0.0353	0.0369		0.15	3.54	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1988, Volume 1, New York 1990
Chile	1989	0.0297	0.0323		0.15	na	ISIC 1 & 2; UNIDO, International Yearbook of Industrial Statistics 1996, Vienna 1996

Chile	1992	0.0261	0.0284	0.18	na	ISIC 1 & 2; UNIDO, International Yearbook of Industrial Statistics 1996, Vienna 1996
Chile	1996	0.0271	0.0295	0.19	na	ISIC 1 & 2; UNIDO, International Yearbook of Industrial Statistics 2003, Vienna 2003
Chile	1998	0.0337	0.0359	0.16	na	ISIC 1 & 2; UNIDO, International Yearbook of Industrial Statistics 2003, Vienna 2003
Chile	2000	0.0312	0.0334	0.18	na	ISIC 1 & 2; UNIDO, International Yearbook of Industrial Statistics 2003, Vienna 2003
Colombia	1958	0.0199		0.32	na	ISIC 1; UN, The Growth of World Industry, 1953-1965, National Tables, New York 1967
Colombia	1963	0.0146		0.32	2.33	ISIC 1; UN, The Growth of World Industry, 1953-1965, National Tables, New York 1967
Colombia	1976	0.0151	0.0168	0.20	2.27	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1980, Volume 1, New York 1982
Colombia	1986	0.0157	0.0167	0.16	1.79	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1990, Volume 1, New York 1992
Colombia	1996	0.0180	0.0189	0.16	na	ISIC 1 & 2; UNIDO, International Yearbook of Industrial Statistics 2002, Vienna 2002
Costa Rica	1963	0.0085	0.0088	0.27	na	ISIC 1 & 2; UN, The Growth of World Industry 1961-1970, Volume I, 1971 edition, New York 1973
Costa Rica	1975	0.0134	0.0136	0.23	2.17	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1979, Volume 1, New York 1981
Costa Rica	1986	0.0164	0.0169	0.25	na	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1990, Volume 1, New York 1992
Costa Rica	1996	0.0179	0.0185	0.33	na	ISIC 1 & 2; UNIDO, International Yearbook of Industrial Statistics 2002, Vienna 2002
Dominican R.	1963	0.0210	0.0215	0.48	na	ISIC 1 & 2; UN, The Growth of World Industry 1961-1970, Volume I, 1971 edition, New York 1973
Dominican R.	1975	0.0230	0.0232	na	na	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1977, Volume 1, New York 1979
Dominican R.	1985	0.0394	0.0395	na	na	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1988, Volume 1, New York 1990
Ecuador	1963	0.0127		0.28	2.56	ISIC 1; UN, The Growth of World Industry, 1953-1965, National Tables, New York 1967
Ecuador	1976	0.0075	0.0089	0.26	2.27	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1980, Volume 1, New York 1982
Ecuador	1986	0.0161	0.0184	0.37	na	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1990, Volume 1, New York 1992
Ecuador	1996	0.0371	0.0388	0.15	na	ISIC 1 & 2; UNIDO, International Yearbook of Industrial Statistics 2002, Vienna 2002
El Salvador	1972	0.0161	0.0194	na	na	ISIC 1 & 2; UN, The Growth of World Industry 1961-1970, Volume I, 1971 edition, New York 1973
El Salvador	1975	0.0136	0.0148	0.21	2.56	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1977, Volume 1, New York 1979
El Salvador	1985	0.0174	0.0177	0.26	na	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1988, Volume 1, New York 1990
El Salvador	1996	0.0279	0.0296	0.26	na	ISIC 1 & 2; UNIDO, International Yearbook of Industrial Statistics 1999, Vienna 1999
Guatemala	1968	0.0207	0.0218	0.29	na	ISIC 1 & 2; UN, The Growth of World Industry 1961-1970, Volume I, 1971 edition, New York 1973
Guatemala	1974	0.0249	0.0262	0.24	3.33	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1977, Volume 1, New York 1979
Guatemala	1986	0.0353	0.0379	0.23	2.56	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1990, Volume 1, New York 1992
Guatemala	1998	0.0340	0.0455	na	na	ISIC 1 & 2: UNIDO, Industrial Statistics 2005 (website)
Mexico	1930	0.0282		0.33	na	15 sectors; Primer censo industrial de 1930, Mexico
Mexico	1960	0.0102		0.36	2.04	ISIC 1; UN, The Growth of World Industry, 1953-1965, National Tables, New York 1967
Mexico	1976	0.0116	0.0117	0.13	1.84	ISIC 1 & 2; 15 & 18 sectors; UN, Yearbook of Industrial Statistics 1980, Volume 1, New York 1982

Mexico	1986	0.0090	0.0090		0.16	2.02	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1990, Volume 1, New York 1992
Mexico	1990	0.0120	na		0.21	2.54	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1990, Volume 1, New York 1992
Mexico	1992	0.0133	0.0147			na	ISIC 1 & 2; UNIDO, International Yearbook of Industrial Statistics 1996, Vienna 1996
Mexico	1996	0.0174	0.0181	0.0228	0.16	na	ISIC 1,2 & 3; UNIDO, International Yearbook of Industrial Statistics 2002, Vienna 2002
Mexico	1998	0.0189	0.0199	0.0243	0.18	na	ISIC 1,2 & 3; UNIDO, International Yearbook of Industrial Statistics 2006, Vienna 2006
Mexico	2000	0.0185	0.0195	0.0236	0.20	na	ISIC 1,2 & 3; UNIDO, International Yearbook of Industrial Statistics 2006, Vienna 2006
Panama	1961	0.0068			0.35	2.13	ISIC 1; UN, The Growth of World Industry, 1953-1965, National Tables, New York 1967
Panama	1976	0.0155	0.0161		0.30	2.08	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1980, Volume 1, New York 1982
Panama	1987	0.0281	0.0288		0.35	na	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1990, Volume 1, New York 1992
Panama	1994	0.0405	0.0530		0.48	na	ISIC 1 & 2; UNIDO, International Yearbook of Industrial Statistics 1999, Vienna 1999
Peru	1963	0.0124			0.30	2.38	ISIC 1; UN, The Growth of World Industry, 1953-1965, National Tables, New York 1967
Peru	1973	0.0102	0.0122		0.18	2.44	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1977, Volume 1, New York 1979
Peru	1986	0.0230	0.0248		0.19	2.22	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1990, Volume 1, New York 1992
Peru	1996	0.0466	0.0591		0.18	na	ISIC 1 & 2; UNIDO, International Yearbook of Industrial Statistics 2002, Vienna 2002
Uruguay	1930	0.0042			0.38	1.49	18 sectors; Censo Industrial de 1930, in: Revista de la Union Industrial de Uruguaya, ano 57, no. 135
Uruguay	1968	0.0115	0.0115		0.33	na	ISIC 1 & 2; UN, The Growth of World Industry 1961-1970, Volume I, 1971 edition, New York 1973
Uruguay	1981	0.0136	0.0144		0.32	2.33	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1982, Volume 1, New York 1984
Uruguay	1986	0.0161	0.0173		0.25	2.22	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1990, Volume 1, New York 1992
Uruguay	1997	0.0302	0.0307		0.36	na	ISIC 1 & 2; UNIDO, International Yearbook of Industrial Statistics 2002, Vienna 2002
Venezuela	1971	0.0130	0.0136		na	2.50	ISIC 1 & 2; UN, The Growth of World Industry, Volume I, 1973 edition, New York 1975
Venezuela	1976	0.0121	0.0125		0.25	5.88	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1980, Volume 1, New York 1982
Venezuela	1986	0.0135	0.0152		0.29	5.88	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1990, Volume 1, New York 1992
Venezuela	1996	0.0318	0.0355		na	na	ISIC 1 & 2; UNIDO, International Yearbook of Industrial Statistics 2002, Vienna 2002
Australia	1912	0.0136			0.56	na	16 sectors; Manufacturing Industries in the Commonwealth 1912, Melbourne 1914
Australia	1923	0.0091			0.51	1.67	19 sectors; Production Bulletin No. 17, Summary of Australian Production Statistics for 1912-13 to 1922-23, Melbourne
Australia	1935	0.0096			0.44	1.64	15 sectors; Production Bulletin No. 30, Summary of Australian Production Statistics for 1925-26 to 1935-36, Canberra
Australia	1954	0.0024			0.58	1.22	ISIC 1; UN, The Growth of World Industry, 1953-1965, National Tables, New York 1967
Australia	1963	0.0035			0.52	1.30	ISIC 1; UN, The Growth of World Industry, 1953-1965, National Tables, New York 1967
Australia	1976	0.0024	0.0027		0.56	1.32	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1980, Volume 1, New York 1982
Australia	1985	0.0039	0.0041		0.48	1.20	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1986, Volume 1, New York 1988
Australia	1998	0.0073	0.0076	0.0090	0.36	na	ISIC 1,2 & 3; UNIDO, International Yearbook of Industrial Statistics 2002, Vienna 2002

Canada	1905	na			na	1.85	15 sectors; Census and Statistics, Bulletin II, Manufactures of Canada, Ottawa 1907
Canada	1910	0.0096			0.35	na	15 sectors; The Canada Yearbook 1912, Ottawa 1913
Canada	1925	0.0054			0.44	1.90	9 sectors; Dominion Bureau of Statistics, The Canada Yearbook 1927-28, Ottawa 1928
Canada	1935	0.0044			0.43	1.89	9 sectors; Dominion Bureau of Statistics, The Canada Yearbook 1938, Ottawa 1938
Canada	1963	0.0072			0.49	1.39	ISIC 1; UN, The Growth of World Industry, 1953-1965, National Tables, New York 1967
Canada	1976	0.0060	0.0065		0.51	1.34	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1980, Volume 1, New York 1982
Canada	1986	0.0096	0.0103		0.45	1.44	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1990, Volume 1, New York 1992
Canada	1996	0.0090	0.0096	0.0118	0.40	na	ISIC 1 & 2; UNIDO, International Yearbook of Industrial Statistics 2002, Vienna 2002
Canada	1999	0.0105	0.0111	0.0137	0.34	na	ISIC 1,2 & 3; UNIDO, International Yearbook of Industrial Statistics 2006, Vienna 2006
USA	1900	0.0061			0.41	na	15 sectors; Abstract of the Twelfth Census of the United States 1900, Washington 1902
USA	1914	0.0059			0.41	na	16 sectors; Statistical Abstract of the United States 1928, Washington 1928
USA	1925	0.0059			0.40	na	16 sectors; Statistical Abstract of the United States 1928, 50th number, Washington
USA	1935	0.0082			0.39	na	16 sectors; Statistical Abstract of the United States 1938, 60th number, Washington
USA	1954	0.0072			0.54	1.56	ISIC 1; UN, The Growth of World Industry, 1953-1965, National Tables, New York 1967
USA	1958	0.0089			0.52	na	ISIC 1; UN, The Growth of World Industry, 1957-1966, 1967 edition, New York 1969
USA	1959	0.0095			0.50	na	ISIC 1; UN, The Growth of World Industry, 1957-1966, 1967 edition, New York 1969
USA	1960	0.0094			0.51	na	ISIC 1; UN, The Growth of World Industry, 1957-1966, 1967 edition, New York 1969
USA	1961	0.0096			0.51	na	ISIC 1; UN, The Growth of World Industry, 1957-1966, 1967 edition, New York 1969
USA	1962	0.0096			0.50	na	ISIC 1; UN, The Growth of World Industry, 1957-1966, 1967 edition, New York 1969
USA	1963	0.0095			0.49	1.53	ISIC 1; UN, The Growth of World Industry, 1953-1965, National Tables, New York 1967
USA	1964	0.0096			0.48	na	ISIC 1; UN, The Growth of World Industry, 1957-1966, 1967 edition, New York 1969
USA	1965	0.0094			0.47	na	ISIC 1; UN, The Growth of World Industry, 1957-1966, 1967 edition, New York 1969
USA	1966	0.0090			0.47	na	ISIC 1; UN, The Growth of World Industry, 1957-1966, 1967 edition, New York 1969
USA	1968	0.0076	0.0079		0.47	1.55	ISIC 1 & 2; UN, The Growth of World Industry, 1972 edition, New York 1974
USA	1969	0.0076	0.0080		0.47	1.57	ISIC 1 & 2; UN, The Growth of World Industry, 1972 edition, New York 1974
USA	1970	0.0077	0.0080		0.47	1.56	ISIC 1 & 2; UN, The Growth of World Industry, 1972 edition, New York 1974
USA	1971	0.0095	0.0100		0.46	1.53	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1976, Volume 1, New York 1978
USA	1972	0.0107	0.0112		0.45	1.56	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1976, Volume 1, New York 1978
USA	1973	0.0111	0.0116		0.44	1.55	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1976, Volume 1, New York 1978
USA	1974	0.0114	0.0120		0.42	1.54	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1976, Volume 1, New York 1978
USA	1975	0.0120	0.0125		0.43	1.55	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1979, Volume 1, New York 1981
USA	1976	0.0133	0.0139		0.50	1.54	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1980, Volume 1, New York 1982
USA	1977	0.0134	0.0141		0.41	1.53	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1980, Volume 1, New York 1982
USA	1978	0.0135	0.0142		0.41	1.53	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1982, Volume 1, New York 1984
USA	1979	0.0149	0.0164		0.40	1.52	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1982, Volume 1, New York 1984
USA	1980	0.0144	0.0151		0.41	1.53	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1982, Volume 1, New York 1984

USA	1981	0.0147	0.0155		0.41	1.53	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1982, Volume 1, New York 1984
USA	1982	0.0140	0.0147		0.41	1.53	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1984, Volume 1, New York 1986
USA	1983	0.0142	0.0151		0.40	1.55	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1987, Volume 1, New York 1989
USA	1984	0.0140	0.0148		0.39	1.57	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1987, Volume 1, New York 1989
USA	1985	0.0136	0.0143		0.49	1.56	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1987, Volume 1, New York 1989
USA	1986	0.0131	0.0138		0.39	1.55	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1987, Volume 1, New York 1989
USA	1987	0.0122	0.0132		0.45	1.57	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1991, Volume 1, New York 1993
USA	1988	0.0121	0.0132		0.44	1.55	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1991, Volume 1, New York 1993
USA	1989	0.0121	0.0133		0.44	1.63	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1991, Volume 1, New York 1993
USA	1990	0.0125	0.0136		0.44	1.64	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1991, Volume 1, New York 1993
USA	1991	0.0130	0.0142		0.45	1.64	ISIC 1 & 2; UN, Yearbook of Industrial Statistics 1991, Volume 1, New York 1993
USA	1992	0.0107	0.0116		0.35	na	ISIC 1,2 & 3; UNIDO, International Yearbook of Industrial Statistics 1996, Vienna 1996
USA	1993	0.0107	0.0116		0.34	na	ISIC 1,2 & 3; UNIDO, International Yearbook of Industrial Statistics 1996, Vienna 1996
USA	1994	0.0111	0.0122		0.33	na	ISIC 1,2 & 3; UNIDO, International Yearbook of Industrial Statistics 1998, Vienna 1998
USA	1995	0.0112	0.0122		0.32	na	ISIC 1,2 & 3; UNIDO, International Yearbook of Industrial Statistics 1998, Vienna 1998
USA	1997	0.0104	0.0111	0.0132	0.30	na	ISIC 1,2 & 3; UNIDO, International Yearbook of Industrial Statistics 2002, Vienna 2002
USA	1998	0.0101	0.0108	0.0129	0.30	na	ISIC 1,2 & 3; UNIDO, International Yearbook of Industrial Statistics 2002, Vienna 2002
USA	1999	0.0100	0.0108	0.0132	0.30	na	ISIC 1,2 & 3; UNIDO, International Yearbook of Industrial Statistics 2002, Vienna 2002
USA	2000	0.0097	0.0106	0.0130	0.31	na	ISIC 1,2 & 3; UNIDO, International Yearbook of Industrial Statistics 2005, Vienna 2005
USA	2001	0.0093	0.0102	0.0124	0.32	na	ISIC 1,2 & 3; UNIDO, International Yearbook of Industrial Statistics 2005, Vienna 2005

Notes: The International Standard of Industrial Classification 1 (ISIC 1) consists of 20 manufacturing industries. The ISIC 1 is widely adopted in the post-war industrial surveys in Latin American countries and guarantees a consistent link between employment, wages and value added. Since the ISIC has been revised several times, the figures from later revisions were transformed to the ISIC 1 classification in order to improve the comparability of the Theil estimates. A compatible sector classification does not mean that all industries are necessarily present, since sector structures change over time and differ from country to country. Hence, as far as the development or disappearance of manufacturing industries influences wage or productivity differentials this is included in the Theil coefficient. The pre-war benchmarks deviate slightly from the ISIC 1 as some sectors were non-existent at that time and others, such as the food and textile industries, were administered at a more disaggregated level. These pre-war surveys mostly include 15 to 19 sectors. In a few cases the sector decomposition of the industrial surveys was much more detailed, amounting to over 200 sectors. The Theil indices derived from these surveys were adjusted downward by an aggregation procedure in which the total amount of sectors was reduced to 20.

Table A.7.4: An example of a three-sector Theil-index

	Income share (w_y)	employment share (w_e)	Theil-index
Agriculture	0.2	0.44	**-0.069**
Industry	0.34	0.14	**0.134 +**
Services	0.46	0.42	**0.015 +**
Three-sector Theil coefficient	1	1	**0,0796**

The basic idea of the Theil-index is that in a situation of complete equality every worker earns the same amount of income. Hence, if the employment share w_e is larger than the income share w_y the sector generates less income than "expected" on the basis of its employment share. In this case the sector contribution to the Theil-index becomes negative, as the agricultural sector indicates in the example table. If the income share exceeds the employment share, as in the industrial and service sectors, the contribution to the Theil-index becomes positive. If a sector generates exactly the share of total income as expected on the basis of its employment share, the sector contribution to the index is zero. The bold numbers in the last column of the table refer to the respective contributions of each of the three sectors to the three-sector Theil coefficient, which is the number below the line. The logarithmic specification of the Theil formula ensures that the sum of the different sector contributions to inequality is a positive number between zero and one, where zero indicates perfect equality and higher numbers indicate greater inequality. Note that in this case the number of sectors is three, but when adopting the ISIC 1 classification of manufacturing industries the number is 20. A disadvantage of this measure is that the results can not be linearly compared, i.e. a Theil coefficient of 0.4 does not reflect a level of inequality two times as large as a Theil coefficient of 0.2. The coefficient increases exponentially at higher "levels" of inequality. Conceição and Ferreira (2000) present an insightful introduction into the technical details of the Theil-index.

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Samenvatting

(Dutch summary)

De huidige omvang van inkomens- en bezitsongelijkheid in Latijns Amerikaanse landen is, gemeten naar internationale maatstafen, buitengewoon groot. In dit proefschrift worden de wortels van de Latijns Amerikaanse economische ongelijkheid geanalyseerd in het koloniaal verleden, om vervolgens de blik te richten op de ontwikkelingen in het tijdvak 1870-2000. De snelle opmars van technologische innovatie, industrialisering, urbanisering en verschillende fases van globalisering en de-globalisering maakten gedurende de 'lange twintigste eeuw' een definitief einde aan het voortbestaan van de 'oude' koloniale samenleving. De cruciale vraag is waarom Latijns Amerikaanse landen er niet in slaagden, ondanks het optreden van de krachten van economische modernisering, om af te rekenen met de koloniale erfenis van economische ongelijkheid?

Om inzicht te krijgen in dit vraagstuk ben ik uitgegaan van drie belangrijke vooronderstellingen. Ten eerste, het is niet zozeer de omvang of snelheid van economische groei, maar veeleer de *aard* van economische ontwikkeling die bepaalt of een economisch moderniseringsproces gepaard gaat met substantiële veranderingen in de omvang van de inkomensongelijkheid. Ten tweede, een verandering in de mobiliteit van productiefactoren vormt de belangrijkste voorwaarde voor een *blijvende* verandering in de verdeling van inkomen en bezit. Ten derde, institutionele verandering is de belangrijkste drijvende kracht achter veranderingen in factor mobiliteit.

Uit deze vooronderstellingen volgt dat in het verklaringsmodel voor lange termijn veranderingen in inkomensverdeling, plaats moet worden gemaakt voor het effect van specifieke Latijns Amerikaanse initiële condities op het padafhankelijke proces van economische en institutionele ontwikkeling. Eenvoudiger verwoord, de determinanten van economische ongelijkheid, zoals het proces van globalisering, structurele verandering (met inbegrip van technologische en demografische ontwikkelingen) en institutionele verandering, moeten worden bestudeerd in hun historische context. Institutionele verandering moet worden opgevat als een endogeen proces en daarom is het van belang de interconnecties tussen de determinanten van ongelijkheid te onderzoeken.

Op basis van secundaire literatuur wordt in **hoofdstuk twee** de 'institutionalisering van ongelijkheid' tijdens de onwikkeling van de koloniale samenlevingen in Latijns Amerika

besproken. Ik gebruik deze term om aan te geven dat economische ongelijkheid in de koloniale tijd niet alleen was gebaseerd op een systeem van economische privileges en staatsmonopolies, maar dat deze vormen van economische ongelijkheid diep geworteld waren in de dagelijkse praktijk van sociale uitsluiting en ethnische discriminatie. De Iberische koloniale instituties werden ontworpen om productiefactoren zoals arbeid en land te contreleren. De loyaliteit van een kleine politieke, economische en militaire elite aan de Spaanse kroon vormde het fundament voor de politieke en militaire controle over het Altlantische imperium (en de exploitatie van haar minerale rijkdommen). De institutionalisering van ongelijkheid leidde ertoe dat de scheve verdeling van economische middelen tot ver in de post-koloniale tijd stand hield. Daarnaast leidde de ongelijkmatige vespreiding en invloed van verschillende koloniale instituties tot een sterke gevarieerde koloniale erfenis in de centrale en perifere delen van het Spaanse rijk.

In **hoofdstuk drie** wordt de verdeling van land in Latijns Amerika bestudeerd vanuit een internationaal vergelijkend perspectief. Een regressie analyse van landongelijkheid laat zien dat voormalig Latijns Amerikaanse kolonieën worden gekenmerkt door een buitengewoon ongelijke verdeling van land. De vraag is waarom dit verschijnsel zo wijdverbreid is in Latijns Amerika: hangt het samen met specifieke natuurlijke en geografische kenmerken of zijn specifiek Iberische instituties de bepalende factor? Ik betoog het laatste. De verdeling van land was een belangrijk instrument in handen van de Iberische overheden om de loyaliteit van plaatselijke belangengroepen te verwerven. Deze conclusie wordt gestaafd aan de hand van een een drietal vergelijkende case-studies van voormalig Britse kolonieën: Maleisië, Sierra Leone en Zambia. Deze studies laten zien dat ook de sterk gevarieerde Britse landverdelingspolitiek, vooral het gevolg is van plaatselijke of internationale politieke en strategische overwegingen, en pas in tweede instantie, het gevolg van de natuurlijke mogelijkheden om grootschalige plantages op te zetten. Dit verklaart ook waarom in een regio met zo'n grote natuurlijke diversiteit, landongelijkheid zo'n algemeen verschijnsel kon worden.

Deze koloniale erfenis en de daaraan gekoppelde onderdrukking van grote delen van de rurale bevolking had belangrijke implicaties voor de *aard* van economische ontwikkeling in de twintigste eeuw. Een scheve verdeling van land hoeft op zichzelf geen belemmering te vormen voor economische modernisering, maar de politieke belangen van een kleine groep grootgrondbezitters zijn dat doorgaans wel. Zij waren in staat om zich goed te organiseren en hun traditionele grip om de beschikbare arbeidskracht en land te verdedigen. De roep om landhervormingen werd in veel gevallen in de kiem gesmoord. Dit slepende verdelingsconflict had ten minste twee lange termijn gevolgen. Ten eerste zette het een rem op publieke investeringen in onderwijs, waarvoor de medewerking van de economische elite van cruciaal belang was. Ten tweede gaf het een extra impuls aan de migratiestroom van het

platteland naar de stad in de tweede helft van de twintigste eeuw. Beide gevolgen komen later in het boek nog uitgebreider aan de orde (hoofdstuk vier en zeven).

Hoofdstuk vier vertrekt vanuit de constatering dat, vrijwel nergens anders in de wereld, de inkomensverschillen tussen invidividuen met een verschillend opleidingsniveau, zo hoog zijn als in Latijns Amerika. Onderwijsongelijkheid is bovendien de belangrijkste determinant van inkomensongelijkeid in het Latijns Amerika van de eenentwintigste eeuw. In hoofdstuk vier toon ik aan dat de instroom in het primair onderwijs in Latijns Amerikaanse landen tussen 1870 en 1930 lager ligt dan kon worden verwacht op basis van het gemiddelde BNP per hoofd van de bevolking. En ondanks het feit dat deze instroom in de twintigste eeuw niet harder of langzamer groeide dan kon worden verwacht, laat een vergelijking met de armste ontwikkelingslanden zien dat het aantal zittenblijvers en vroegtijdig schoolverlaters buitengewoon hoog was. Mede door de ontwikkeling van privé-scholen voor de hogere inkomensgroepen en de systematisch afwijkende verdeling van publieke middelen ten gunste van het tertiair onderwijs, bleef de kwaliteit van het onderwijs voor het overgrote deel van de arme bevolking ver onder de maat. Deze omstandigheden zijn sterk veranderd in de laatste decennia, maar vergeleken bij de maatstaven van de OECD landen is er nog veel ruimte voor verbetering.

Historisch gezien hangt de problematische ontwikkeling van het onderwijsstelsel in Latijns Amerika samen met de onwil en/of onmacht om een deel van de ongelijk verdeelde welvaart te herverdelen via overheidsinvesteringen in publiek onderwijs ten gunste van de armen. De ongelijke toegang tot onderwijs werd verder versterkt door de problematische toegang tot de kapitaalmarkt en het gebrek aan legaal onderpand voor leningen (wat weer samenhing met de geringe mate van (legaal) grondbezit onder de lage inkomensgroepen). Dergelijke belemmeringen voor sociale mobiliteit werden gelegitimeerd door Positivistische en Sociaal-Darwinistische ideologieën waarin werd gesteld dat onderwijs slechts nuttig is voor een selecte groep mensen en waarin armoede het gevolg is van een gebrek aan aangeboren talenten. Met andere woorden, het investeren in onderwijs voor de sociale onderklasse was een verspilling van energie en middelen. Onder de armen waren de opvattingen over onderwijs minder ideologisch gevoed, maar wel pragmatisch. De schoolgang van kinderen moest worden afgewogen tegen de misgelopen opbrengsten uit hun arbeid. En vanwege de zware plafonds in de sociale pyramide, waren de te verwachten lange termijn opbrengsten van kwalitatief gebrekkig onderwijs niet al te hoog.

Het tweede deel van dit proefschrift begint met een bespreking van verschillende theoretische en historische perspectieven op lange termijn veranderingen in inkomensverdeling. Op basis van deze discussie kom ik in **hoofdstuk vijf** tot een ‘gestyleerd beeld’ van de seculiere trend in Latijns Amerikaanse inkomensongelijkheid gedurende de ‘lange twintigste eeuw’. Ik

bespreek de interconnecties tussen het proces van globalisering, structurele verandering en institutionele verandering. Er wordt speciaal aandacht besteed aan de opkomst van de georganiseerde arbeid in de late negentiende en vroege twintigste eeuw en het effect van globalisering en structurele verandering op de toenemende politieke invloed van de arbeidersbeweging. Ik betoog dat de grote omslag in sociaal-economisch beleid gedurende het interbellum kan worden gezien als een politieke reactie op de toenemende dreiging van de arbeidersbeweging voor de sociale stabiliteit (dat wil zeggen, in de economisch meest ontwikkelde landen in de regio). Een tweede grote omslag vond plaats in de jaren ’70 en ’80. Deze kan, ironischerwijs, weer gezien worden als een onvermijdelijke reactie op de definitieve mislukking van een economische politiek die er mede op gericht was de stedelijke arbeidersklasse tevreden te houden. De centrale hypothese is dat beide omslagpunten bepalend zijn geweest voor de seculiere trend van inkomensongelijkheid in de lange twintigtse eeuw: een stijgende ongelijkheidstrend van 1870 tot 1913, een dalende trend vanaf de jaren ’20, en een nieuw omslagpunt vanaf de vroege jaren ’80.

In de hoofdstukken zes en zeven wordt deze hypothese empirisch onderzocht. **Hoofdstuk zes** gaat in op de verdeling van factor inkomen in de eerste fase van economische transitie tussen 1870 en 1940. Deze analyse levert drie resultaten op die, in combinatie, leiden tot de conclusie dat er sprake is van een trendbreuk in de ongelijkheidstrend in de periode 1919-1929. Ten eerste blijkt uit het werk van Williamson en mede-auteurs (zie bijvoorbeeld O’Rourke and Williamson 1999, Williamson and Bértola 2006, Williamson 2006) dat de relatieve stijging in de reële lonen van stedelijke ongeschoolde arbeiders (relatief t.o.v. pachtprijzen en BNP per hoofd) in de eerste jaren na de Eerste Wereldoorlog een belangrijke breuk vormen met de periode 1870-1913. Ten tweede blijken de loonverschillen tussen verschillende stedelijke beroepsgroepen en sectoren, alsmede de verschillen tussen geschoolde en ongeschoolde arbeiders binnen sectoren, beperkt in vergelijking met internationale maatstaven. Dit geldt zeker voor landen in de zuidelijke delen van Zuid Amerika, zoals Argentinië, Brazilië, Chili en Uruguay. Ten derde blijkt dat, ondanks de relatief geringe kapitaalintensiteit van de industriële productie, de factor kapitaal rijkelijk beloond wordt, ten koste van de factor arbeid. Alles bijeengenomen duiden deze bevindingen erop dat de toenemende omvang van het meer egalitair verdeelde looninkomen in het BNP gedurende het interbellum de start inluidde van een dalende trend in inkomensongelijkheid.

In **hoofdstuk zeven** wordt vervolgens gekeken naar de vraag waarom de inkomensongelijkheid in het laatste kwart van de twintigste eeuw nog zo sterk is toegenomen. Daarvor worden de lange termijn veranderingen in stedelijke loon- en productiviteitsverschillen in de periode 1940-2000 onderzocht. De resultaten worden gekoppeld aan een discussie over de historische determinanten van ongelijkheid. Zodoende brengt dit hoofdstuk verscheidene historische aspecten samen die zijn onderzocht in de vorige

hoofdstukken. De rode draad in het betoog is dat het bestaande institutionele systeem onvoldoende was voorbereid op de enorme transitie in het relatieve arbeidsaandbod die optrad in de loop van de twintigste eeuw.

De expansie van de informele sector in de steden in het laatste kwart van de twintigste eeuw was het gevolg van hoge demografische groei en een ongecontroleerde migratie van het platteland naar de stad. De omvang van deze migratie was veel groter in de meeste Latijns Amerikaanse landen dan in, bijvoorbeeld, de nieuwe industriële economieën in Oost Azië. Dit verschijnsel kan alleen begrepen worden in het licht van een industrialisatie politiek die gericht was op de positie van stedelijke arbieders. En belangrijker nog, het gebrek aan economisch perspectief op het platteland als gevolg van de buitengewoon ongelijke verdeling van grondbezit (zie hoofdstuk drie). Koloniale instituties waren, voor alles, ontworpen om het probleem van chronische arbeidstekorten op te lossen. Echter, deze instituties vormden een povere basis om het snel groeiende overschot aan arbeid in de steden op te vangen. De voorwaarden om de talenten van ongeschoolde arbeiders optimaal te benutten ontbraken (zie hoofdstuk vier).

Een analyse van de trends in loon- en productiviteitsverschillen tussen industriële sectoren laat de gevolgen van gebrekkige institutionele hervormingen zien. Ten eerste, inter-sectorele loonverschillen zijn veel groter aan het eind van de twintigste eeuw dan aan het begin (zoals getoond in hoofdstuk zes). Ten tweede, de stijgende loonverschillen gaan gelijk op met stijgende productivitietsverschillen in het laatste kwart van de twintigste eeuw. Ten derde, de stijging zelf was veel groter dan die in de landen van de controle groep: Australië, Canada en de Verenigde Staten.

Het meerendeel van de studies die de recente ontwikkeling (1970-2000) van inkomensverdeling in OECD landen en Latijns Amerikaanse landen onderzoeken, komt tot de conclusie dat 'skill-biased technological change'[92] de belangrijkste motor is achter toenemende inkomensverschillen, al dan niet in combinatie met de toenemende internationale concurrentie in arbeidsintensieve producten. Maar de vraag blijft staan waarom de stijging in de loonverschillen in Latijns Amerika zoveel scherper was dan elders?

Mijn antwoord is tweeledig. De slechte kwaliteit en ongelijke verdeling van onderwijs beperkte de mobiliteit van de factor arbeid in grote mate. Het gebrek aan maatregelen om factormarkt imperfecties op te lossen heeft een rem gezet op de ontwikkeling van kennis en vaardigheden en potentieël vruchtbaar ondernemerschap. Het groeiende overschot van ongeschoolde arbeiders drukte de lonen in laag-productieve sectoren, terwijl de lonen van de beter geschoolde en getrainde werknemers in de hoog-productieve sectoren stegen. Alhoewel dit deel van het antwoord de recente toename van ongelijkheid kan

[92] Met excuses voor het gebruik van deze Engelse term, maar het meest geschikte Nederlandse equivalent is beslist veel lelijker en minder 'to the point'....

verklaren vanuit een historisch perspectief, verklaart het niet waarom deze toename vooral optrad in de jaren ’70 en ’80.

De ‘timing’ van de stijging in stedelijke loonongelijkheid hangt samen met belangrijke veranderingen in de arbeidsmarktpolitiek. Terwijl factor markt instituties in de negentiende eeuw er nog op waren gericht om het vermogen van de grootgrondbezitters te beschermen, waren ze in het midden van de twintigste eeuw erop gericht om de ontwikkeling en stabiliteit van de industriële sector te garanderen. Loonregulering speelde een belangrijke rol in de importsubstitutie politiek en vormde een standaard onderdeel van de politieke agenda van linkse politieke bewegingen en vakbonden. De voorbeelden van *Peronisme* in Argentinië en de presidentsperiodes van Frei en Allende in Chili illustreren de grote invloed van loonwetgeving op de omvang van loonverschillen. Voor de implementatie van neo-liberale hervormingen in de late twintigste eeuw, werden loonverschillen dus *kunstmatig* beperkt gehouden. Echter, deze loonpolitiek kwam meestal niet ten gunste van de armste groepen in de samenleving, zoals de mensen werkzaam in de informele sector. Met de sterke groei van die laatste groep, vertoonde de opbouw van het inkomensgebouw al een tendens naar polarisatie. Maar het belangrijkste punt is dat, op de lange termijn, programma’s van importsubstitutie en loonregulering alleen gehandhaafd kunnen worden als ook de economische concurrentie wordt gereguleerd.

Veranderingen in arbeidsmarktpolitiek werden onvermijdelijk toen de financiële en fiscale lasten van populistische en/of socialistische vormen van industriepolitiek onhanteerbaar werden. In sommige Latijns Amerikaanse landen kwam deze politiek tot een abrubt einde door een politieke of militaire coup. In andere landen werden hervormingen afgedwongen door de schuldencrisis die de hele regio trof in de vroege jaren ’80. Loonvorming werd in toenemende mate overgelaten aan de vrije markt. Dat wil zeggen, vooral de lonen in de private sectoren die internationaal moesten concurreren, maar niet de lonen in sectoren die monopolistische voordelen behielden. Met name in de kapitaalintensieve industrieën bleek voldoende ruimte te bestaan om de lonen van werknemers te verhogen. In dit opzicht kan worden gesteld dat de neo-liberale hervormingsagenda markt*interventies* heeft beperkt, maar veel minder heeft gedaan om de invloed van markt*imperfecties* te beteugelen.